1. PURPOSE

This specification defines the general requirements for containers for continuously reeled products, that are not otherwise specified on the purchase order or product drawing.

2. SCOPE

This specification provides the minimum requirement to ensure that products are not damaged during shipping or handling. Equivalent packaging or packaging that exceeds these requirements is acceptable for use, with prior written authorization from Autosplice Engineering.

3. REFERENCED DOCUMENTS

3.1 Requirement hierarchy – In the event there is a conflict between this document and other specifications or drawings the order in which the requirements shall be determined are prioritized as follows:

- The Purchase order
- The Autosplice production drawing
- The Customer's drawing (if applicable)
- This specification
- QM-003
- WI-4.6-11
- Other specifications

3.2 QM-003 Supplier Quality Requirements

3.3 WI-4.6-11 Control and Verification of DS Material from Suppliers

4. RESPONSIBILITIES

It is the responsibility of the Supplier to ensure that all products shipped to Autosplice or its Customer's shall be packaged in such a manner to prevent damage caused by normal handling. The recommendations specified herein are general minimum packaging requirements, which have proven to be successful in previous shipments of continuously reeled products. Autosplice Design Engineering department shall be responsible to update and maintain this document.

SPECIFICATIONS

5.1 Packages which are shipped on Skids; The outer container shall be, double ply corrugated cardboard, (75 lbs. test wall “C” flute), natural color. The outside of the container shall have no markings that refer to vendors or suppliers other than an Autosplice approved logo (or as required on P.O. or drawing). Reels for tabs (i.e. stampings) shall be stacked horizontally while stored and shipped, on a standard skid, with a maximum stack height where the total weight of all reels does not exceed 85 lbs. (22-lbs. max per reel). Multiple stacks may be placed on a skid. In some instances the outer container should be larger than the reel diameter see figure 5, and have a cushioning device (i.e. foam caps, bubble pack etc.), which keep the reels from touching the outer carton, to prevent damage of the reels during shipment. Autosplice A/P-2 plastic reels with pins shall be aligned vertically while stored and shipped see figures 1 and 2. The container shall have ends caps, which support the outer shell, and the entire package shall be strapped to the skid to prevent movement during shipping. See figure 3. Skids shall conform to industry standards with forklift entry from two sides. Skid must be capable of supporting a minimum weight of 400 lbs. Every container shall be identified with a packing slip affixed to the outside of the lead carton per QM-003 and must state as a minimum the following information:

- Autosplice purchase order number, part number and quantity shipped.

If inspection samples are required with the shipment the appropriate quantity of parts shall be attached to the outside of each container (not on reel or internal box), and be identified with reel traceability.

Parts that are classified as direct ship to Autosplice Customers must conform to WI-4.6-11. Permanent supplier identification/marking is not permitted anywhere on internal or external packaging. Supplier identification on external removable documents that are shipped to Autosplice is permitted with prior written approval.

Figure 1 Pin boxes stacked vertically

Figure 2 Pin reels in box stacked vertically

Figure 3 **Packages shipped on skids**

5.2 Packages in cartons not shipped on Skids; The outer container shall be, a minimum of double ply corrugated cardboard, (75 lbs. test wall "C" flute), natural color. The outside of the container shall have no markings that refer to vendors or suppliers other than an Autosplice approved logo (or as required on P.O. or drawing). Reeled tabs (i.e. stampings) shall be stacked horizontally while stored and shipped see figure 4, with a maximum stack height where the total weight of all reels does not exceed 50 lbs. (22-lbs. max per reel). Autosplice A/P-2 plastic reels with pins shall be aligned vertically, and the container weight shall not exceed 50 lbs. The container shall be larger than the reel diameter see figure 5, and have a cushioning device (i.e. foam caps, bubble pack, etc.), which keep the reels from touching the outer carton, to prevent movement of the reels and damage during shipment. Every container shall be identified with a packing slip affixed to the outside of the lead carton per QM-003 and must state as a minimum the following information:

- Autosplice purchase order number, part number and quantity shipped.

If inspection samples are required with the shipment the appropriate quantity of parts shall be attached to the outside of each container (not on reel or internal box), and be identified with reel traceability.

Parts that are classified as direct ship to Autosplice Customers must conform to WI-4.6-11. Permanent supplier identification/marking is not permitted anywhere on internal or external packaging. Supplier identification on external removable documents that are shipped to Autosplice is permitted with prior written approval.

Figure 4 **Tabs packaged horizontally**

Figure 5 **Tabs packaged with bubble pack for cushion**

5.3 Reels that are not filled to rim; When weight is the controlling factor as to how full the reel is filled, a belly band (i.e. cardboard or plastic interleaf) may be required to maintain the reel gap at the extremities and prevent flange damage. Consult Autosplice Engineering for approval.

5.4 Tape on Reels; No adhesive tape shall be used on reels to hold parts to the reel. Parts shall be retained in place by wrapping interleaf paper around the final wrap of parts (4 or 5 wraps) and then tape is used from the end of the interleaf paper to attach it to the previous wrap of paper.

5.5 Quantity of part per reel: The quantity of parts per reel should be specified on the applicable production drawing. This number is the target quantity for parts on the reel and a plus or minus tolerance of 10% is acceptable. If no quantity of parts is specified on the drawing the default is as follows;

- Tabs: the reel shall be filled to within ½" of the flange rim or to a maximum of 22 lbs. (22 lbs. includes parts and reel).
- Pins: the reel shall have a maximum of 50,000 pins or 8 lbs. whichever comes first (8 lbs. Includes parts and reel).

5.6 Breaks & Splices; No splices are permitted within a reel that is shipped to Autosplice or it's Customer, unless otherwise specified on the production drawing. Splices can be used to manufacture reeled parts that are to be post-plated, but must be removed by the plating vendor prior to shipment. One break not less than 25% of the total reel quantity is permissible per reel, unless otherwise specified on the production drawing. If breaks or splices are permitted, and are found on a particular reel, the reel label shall note the quantity of breaks with the approximate location (i.e. quantity of parts) and number of splices.

5.7 Reel Core Requirements; Unless otherwise specified on the product drawing, all tab reels shall have core holes as specified below. See Figure 6.

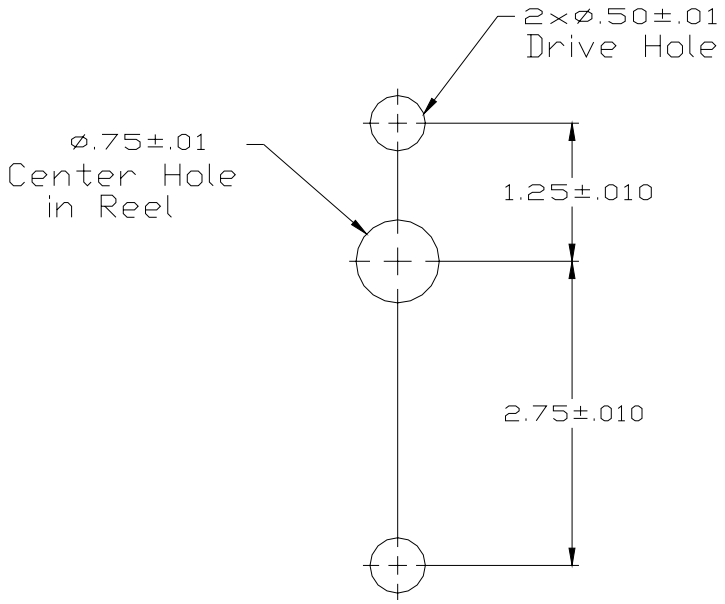

Figure 6 **Core hole pattern**

Flange Access Hole; Unless otherwise specified on the product drawing, all tab reels shall have a flange access hole as specified below. See Figure 7. This hole is required to aid in starting the windings onto the reel.

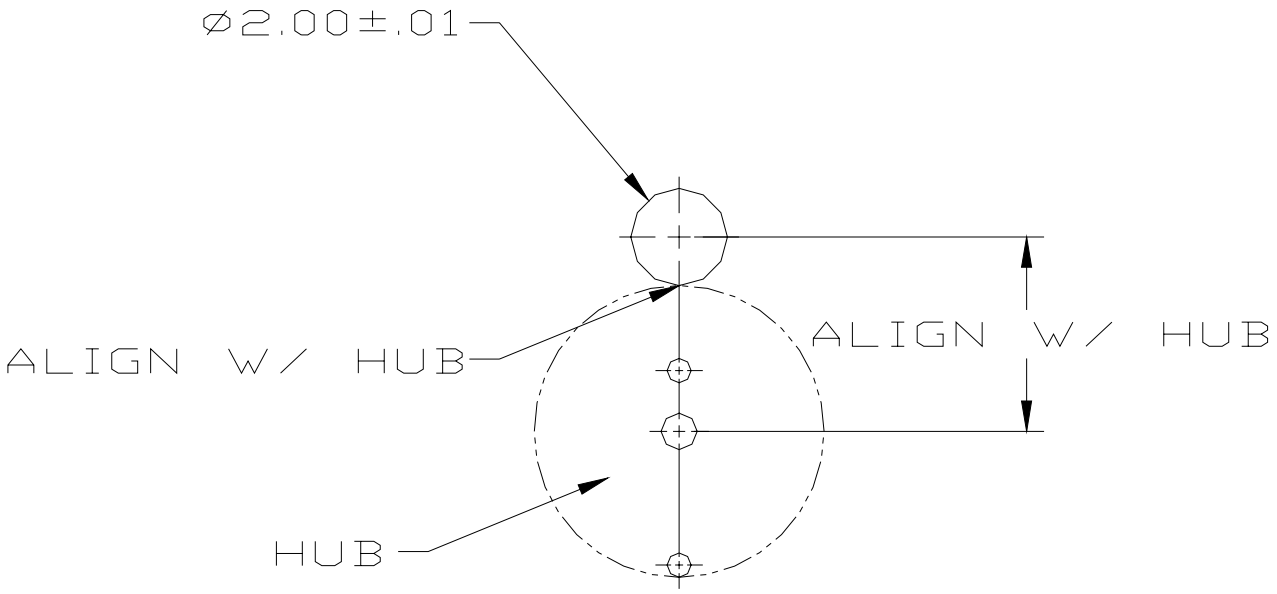

Figure 7 **Flange Access hole**