



TECHNICAL DATA

REPORT DATE: 20 June 2011
REPORTED BY: I. Christopher
Complaint No.: 100223
REPORT N°: 11-171.0-IC
NOTEBOOK Ref.: 206-22

CUSTOMER: Bedford Industries of Worthington (126786), Worthington, MN
SALES: Cindy Pettibone, Scapa NA, Windsor, CT

COMPLAINT: **100223** - Customer is experiencing issues with liner cracking breaking once laminated to their substrate and spooled.

PRODUCT: 154979: UP5040 6" x 1080ft
5 mil Reinforced Transfer Acrylic Adhesive on 76# Polycoated Kraft Liner

BATCH: WIN0024331

NOTES: Samples of laminated customer material of both "Old Liner" (previous lot) and "New Liner" (WIN0024331) were received in Technical Service on 6/20/2011.

EVALUATION: **UP5040**

Master Roll:	Nothing abnormal in review of lot history.
Liner:	Nothing abnormal in review of lot history used in comparison to prior lots of liner.
Design Changes:	Materials Used: No changes in base raw materials or components used. Any Changes: Release system nomenclature from liner supplier – no change to release chemistry or components used.
"Old Liner"	
Visual:	Material shipped to Windsor showed signs of liner/adhesive delamination in supplied format. Multiple sites within sample showed this.
Analytical:	Measurement of a cut section of final product and liner once removed, resulted with the liner being 0.45% shorter than the substrate.
"New Liner"	
Visual:	Material shipped to Windsor showed signs of liner/adhesive delamination in supplied format along with several areas in which the liner split in the machine direction. Multiple sites within sample showed this.
Analytical:	Measurement of a cut section of final product and liner once removed, resulted with the liner being 0.77% shorter than the substrate.

PROBABLE CAUSE: Based upon review in Quality Assurance files and in Technical Service, the potential issues are as follow(s):

UP5040	No Material Issues have been observed.
Supplied Product	Tension levels being induced into the UP5040 during the lamination process. This is causing the product to relieve internal tension by: a) Adhesive delamination from liner causing the customer substrate to bulge b) Liner breaking to relieve the tension

SUMMARY: Based on the investigation for this report, there are two potential methods to resolve this complaint:

- Bedford Industries to reduce/monitor tension of materials before and after lamination.
- Use of **ULTRA 6500** in place of **UP5040**. The proposed product was designed specifically for application in which the liner can see excessive stretch. **The adhesive system used in Ultra 6500 is not identical to that used in UP5040, but has a high degree of similarity in most application areas and in product performance.*

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The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers, before using any product in full scale production, make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operating conditions. The products discussed herein are sold without any warranty as to merchantability of fitness for a particular purpose or any other warranty, expressed or implied. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

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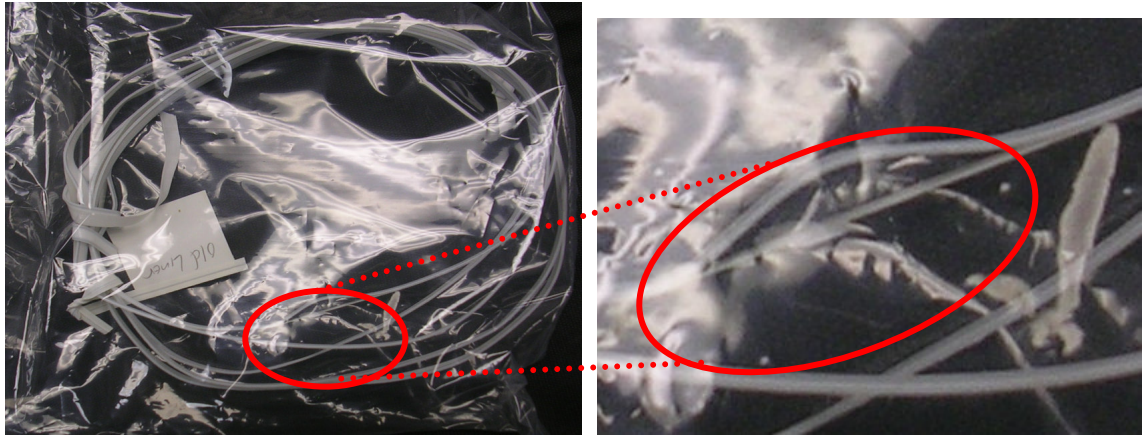
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CUSTOMER:
SALES:

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IMAGE 1:

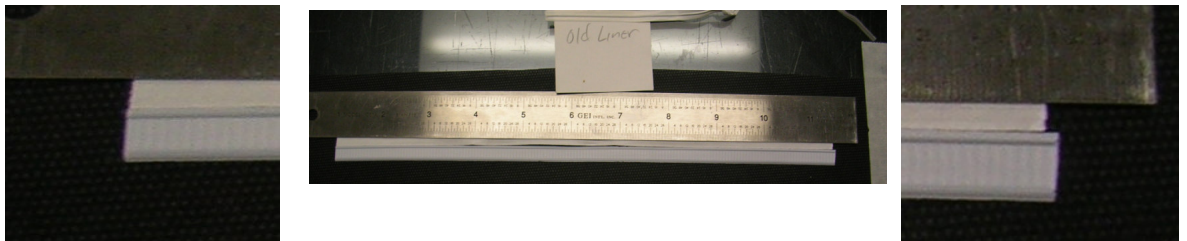
Older Liner



A) Multiple areas in which substrate & adhesive delaminated from liner.

IMAGE 2:

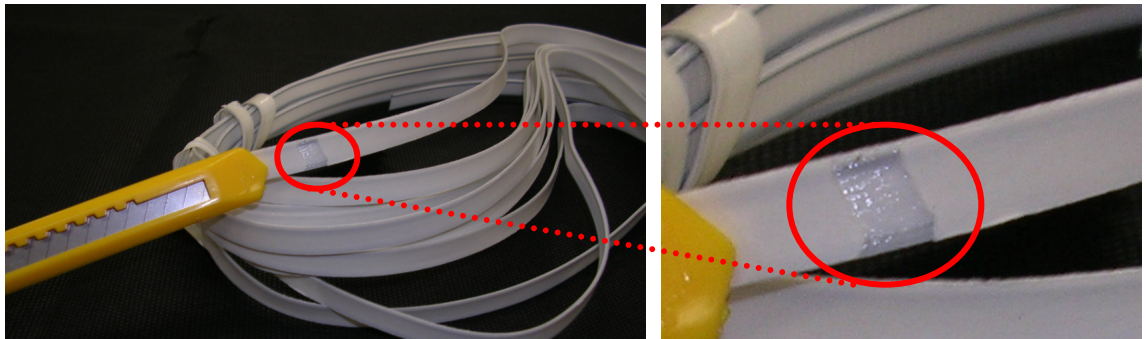
Older Liner



A) Test sample of Liner Length v. Bonded Part Length

IMAGE 3:

Newer Liner



A) Image of point of break in liner on final part assembly.

TIME:

Total:	5 hours
Conference Calls:	1 hr.
Material Investigation (Scapa):	1 hr.
Material Investigation (Customer):	1 hr.
Report Compilation:	2 hr.