



QUALITY
IMPROVEMENT

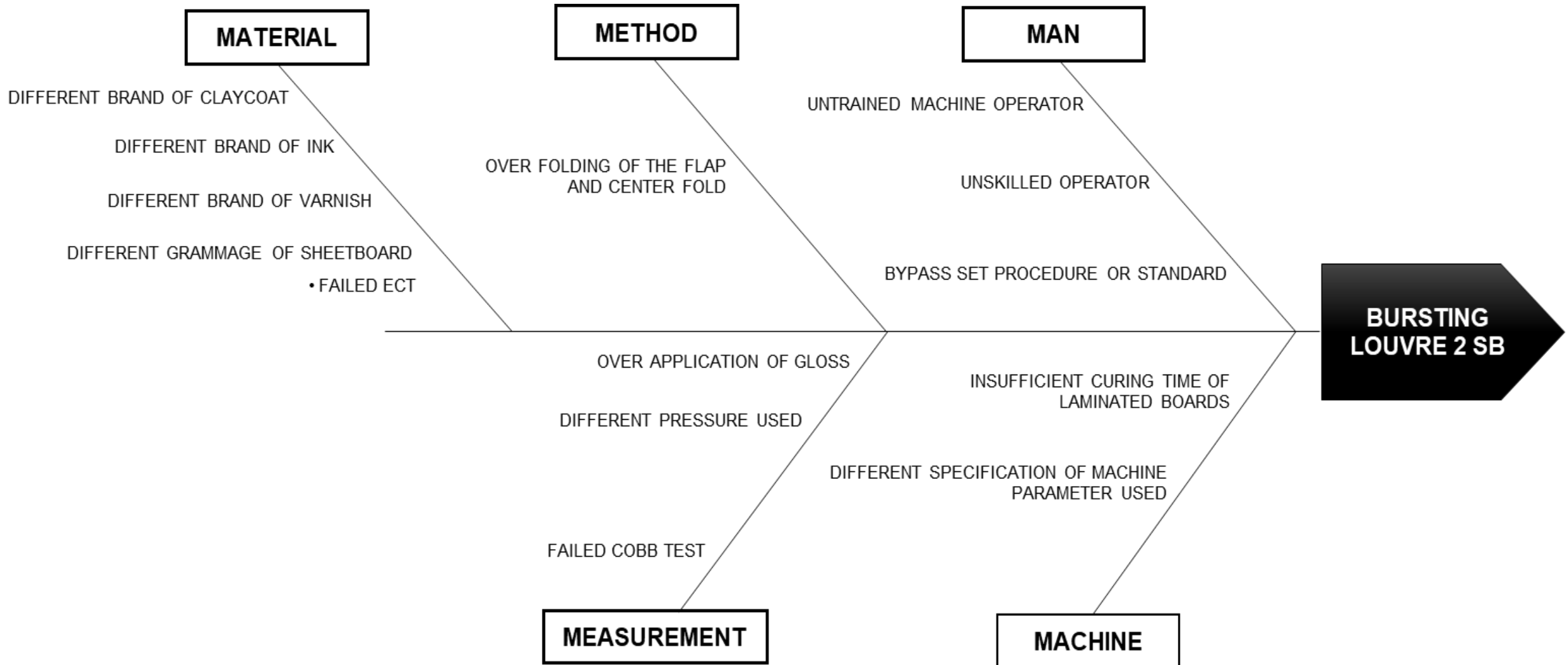
QUALITY
RECORDS



BURSTING ISSUE FOR LOUVRE 2 SB MODELS

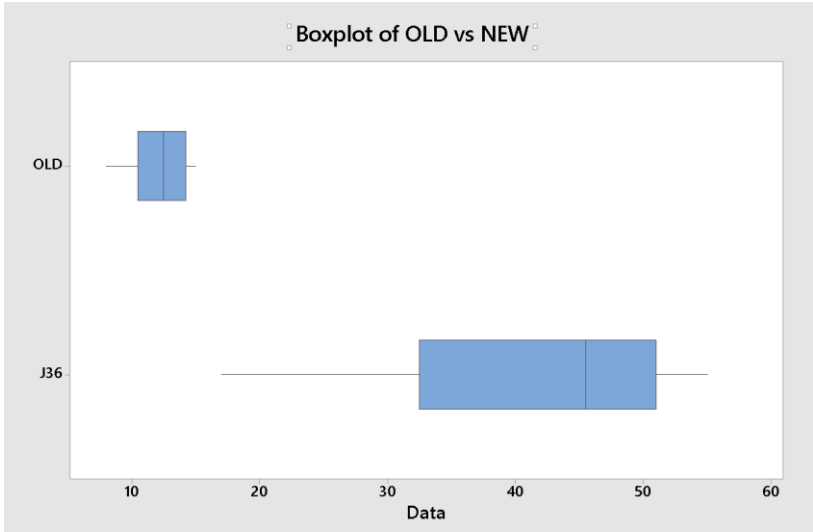


FISH BONE DIAGRAM



CAUSE ANALYSIS:

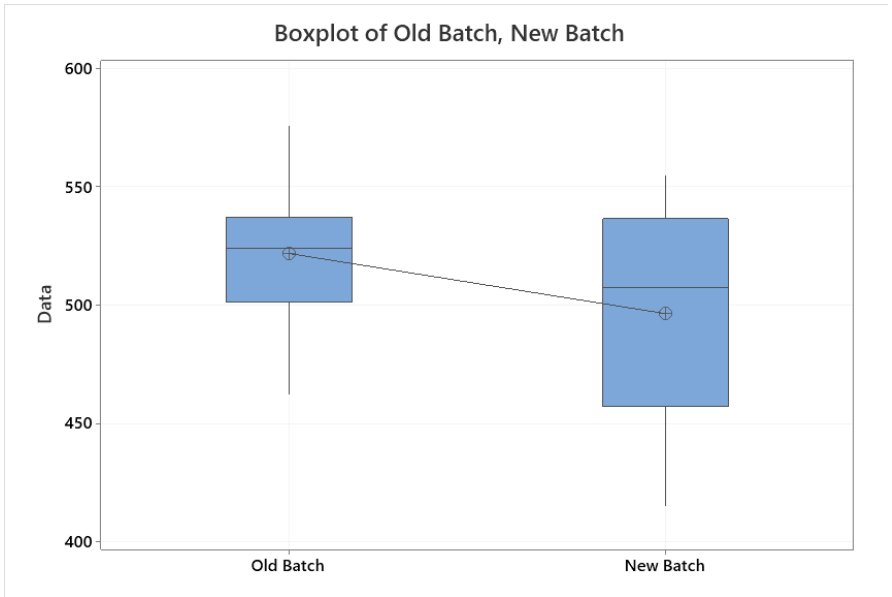
- COBB VALUE CHECKING
- VARIANCE TEST OF OLD (DEC) AND NEW PS (June)



Test for Equal Variances: OLD vs NEW

Method				
Null hypothesis		All variances are equal		
Alternative hypothesis		At least one variance is different		
Significance level		$\alpha = 0.05$		
95% Bonferroni Confidence Intervals for Standard Deviations				
Sample	N	StDev	CI	
OLD	10	2.3476	(1.36376, 5.2086)	
J36	10	12.0757	(6.45273, 29.1271)	
Individual confidence level = 97.5%				
Tests				
		Test	Statistic	P-Value
Multiple comparisons			9.37	0.002
Levene			7.75	0.012

- Since the P Value of 0.002 is less than the set alpha of 0.05, therefore there is a statistically significant difference in the variance of cobb value of the OLD batch versus cobb value of new batch.



Statistics

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Old Batch	20	0	521.80	6.52	29.15	462.00	501.25	524.00	537.25	576.00
New Batch	20	0	496.40	9.52	42.59	415.00	457.25	507.50	536.50	555.00

Test

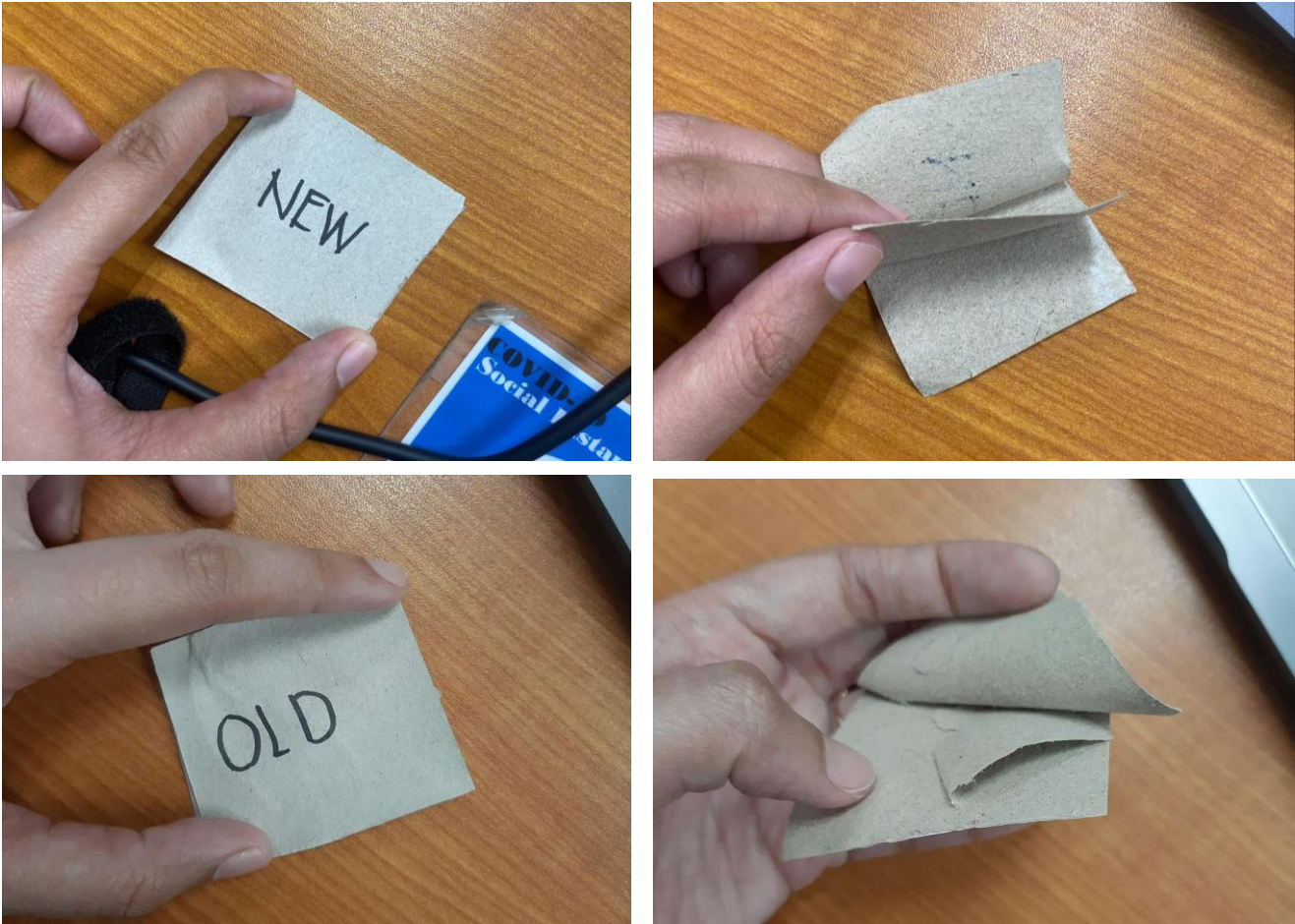
Null hypothesis $H_0: \mu_1 - \mu_2 = 0$

Alternative hypothesis $H_1: \mu_1 - \mu_2 \neq 0$

T-Value	DF	P-Value
2.20	38	0.034

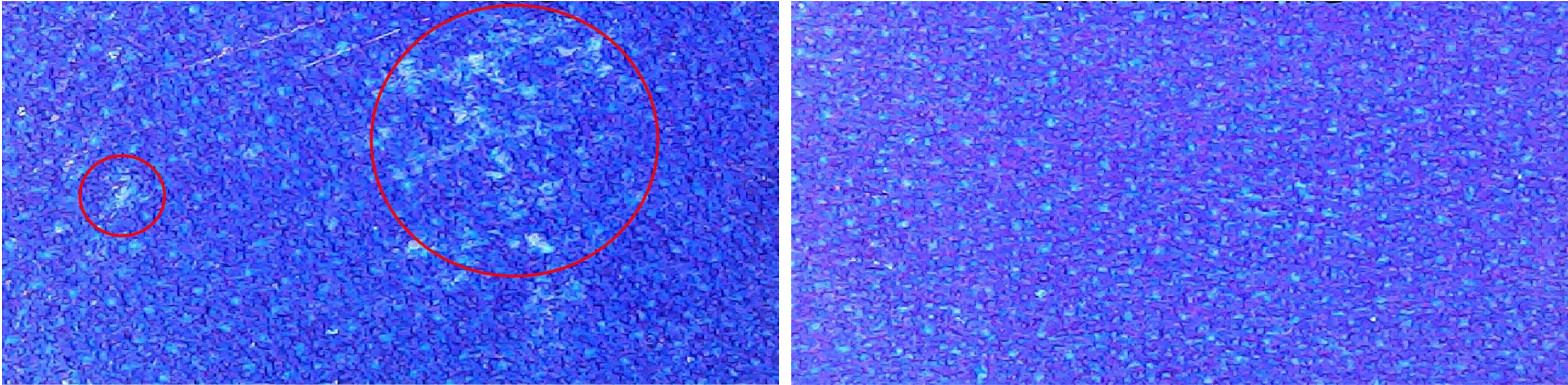
- Since the P Value of 0.034 is less than the set alpha of 0.05, therefore is statistically significant different in the means of bursting strength of OLD batch versus NEW batch.
- OLD batch is stronger than NEW batch with an average bursting strength of 521.8 kPa compared to 496.4 kPa.
- Standard deviations of OLD batch is lower compared to NEW batch.

VISUAL FINDINGS:



- Based on the visual testing conducted, it is discovered that the OLD batch of PS's fiber is more intact/compact rather than NEW batch.
- OLD batch paper cannot be layered while the New batch can be easily layered.

VISUAL FINDINGS:



- Some PS have large pulp and other have some fine pulp. Actual PS is magnify by 100X.



CORRECTIVE ACTION

Conduct die cut process reset-up to compensate the effect of new PS resulting to high rejection of bursting defect.

- CHANGE NEW BLADE
- CHANGE CREASING MATRIX
- CHANGE PATTERN SHEET
- ADDITIONAL PATTERN SHEET FOR BALANCING KNIFE
- NEW DIECUT PLATE
- CLEANING OF DIECUT CHASE
- INCLUDE FLAP ENDURANCE TEST PRIOR MASS PRODUCTION

Highlight: change impression from 1.6 to 1.8 tons.

BEFORE

1.

1. Arrival of new batch of paper

2.

2. Printing Trial

3.

3. Lamination Trial

4.

4. Diecut Trial

5.

5. Gluing Trial

6.

6. QA Inspection

7.

7. Delivery

AFTER

1.

1. Arrival of new batch of paper

2.

2. Conduct Bursting test and Cobb test verification

3.

3. Printing Trial

4.

4. Lamination Trial

5.

5. Diecut Trial

6.

6. Gluing Trial

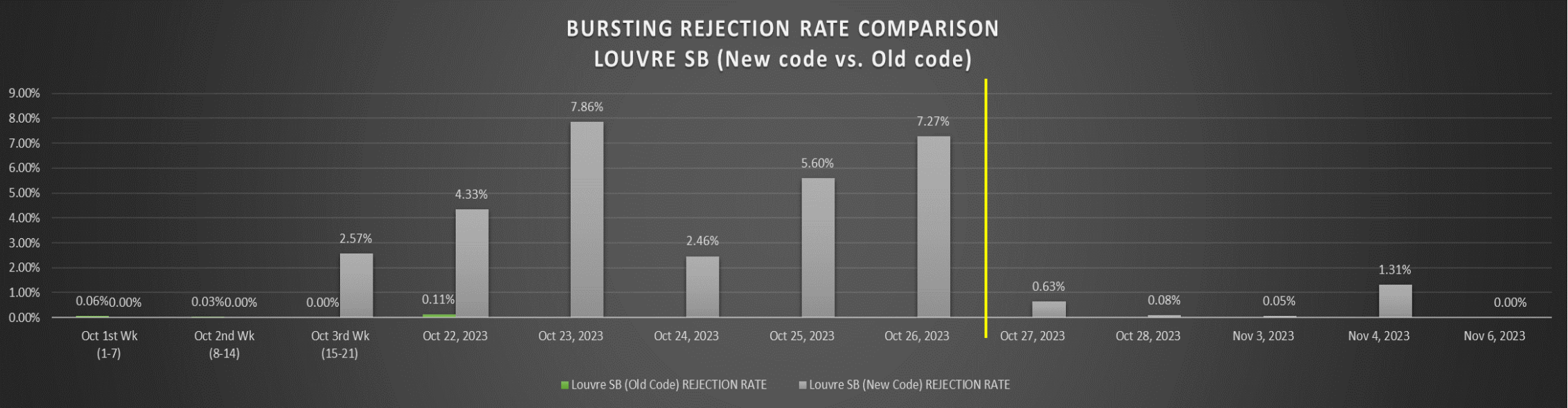
7.

7. QA Inspection

8.

8. Delivery

Invest COBB Test machine for ONSITE testing.



MONTH-TO-MONTH COMPARISON		Oct 1st Wk (1-7)	Oct 2nd Wk (8-14)	Oct 3rd Wk (15-21)	Oct 22, 2023	Oct 23, 2023	Oct 24, 2023	Oct 25, 2023	Oct 26, 2023	Oct 27, 2023	Oct 28, 2023	Nov 3, 2023	Nov 4, 2023	Nov 6, 2023
Louvre SB (New Code)	INPUT QTY	100	100	30275	19705	1590	6910	500	4138	6650	5903	1983	1986	98
	REJECT	0	0	779	854	125	170	28	301	42	5	1	26	0
	REJECTION RATE	0.00%	0.00%	2.57%	4.33%	7.86%	2.46%	5.60%	7.27%	0.63%	0.08%	0.05%	1.31%	0.00%



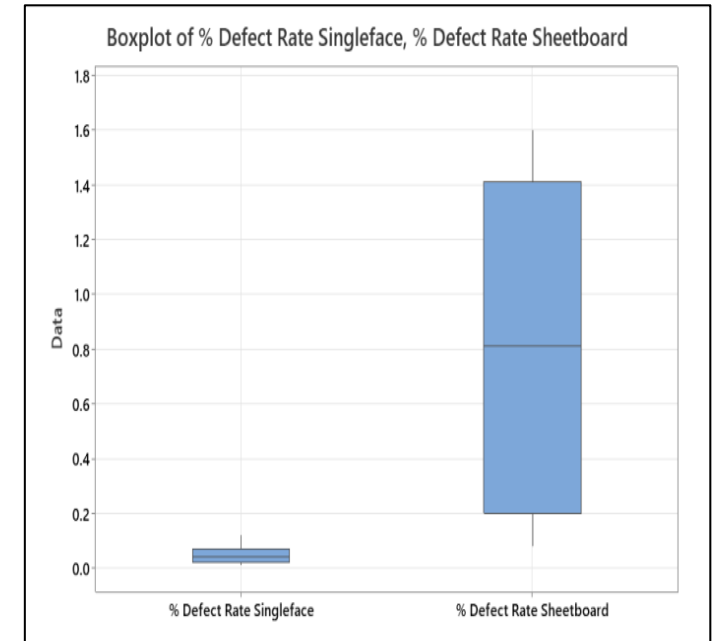
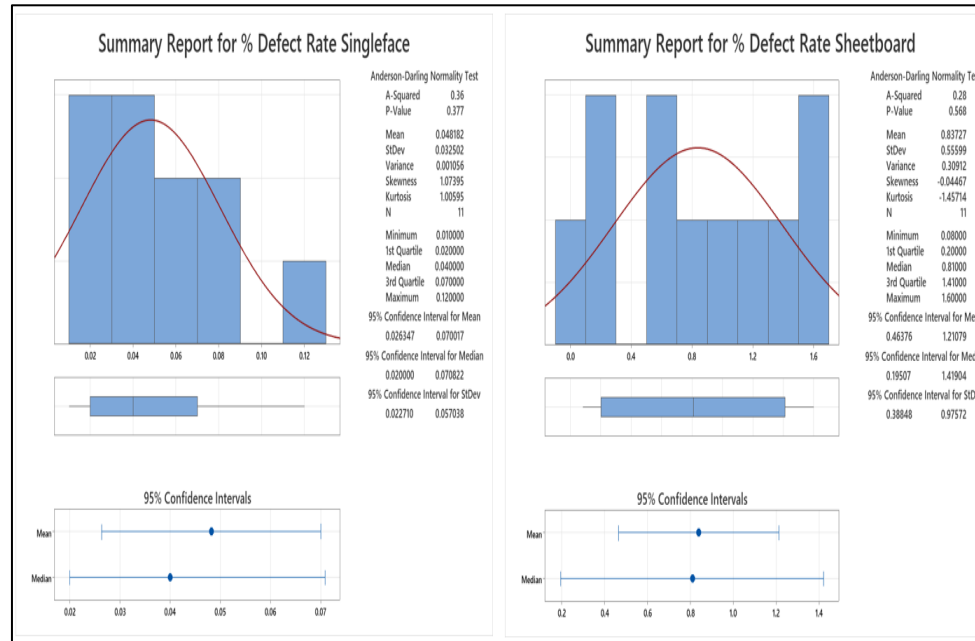
FUTURE PLAN

Change Sheet board to Singleface

Background: High rejection of Bursting defect encountered in Sheetboard material compared to Singleface.

Purpose: To improve productivity by removing additional process of misting.

Month	% Defect Rate Singleface	% Defect Rate Sheetboard
September	0.05	1.05
October	0.04	0.81
November	0.03	1.41
December	0.03	1.52
January	0.07	0.2
February	0.06	0.08
March	0.02	0.14
April	0.01	0.57
May	0.02	0.67
June	0.08	1.6
July	0.12	1.16



Based on the histogram sheet board material has higher defect rate with 0.84% average defect rate with maximum of 1.6% while single face has 0.04% defect rate with maximum of 0.12% as shown also on the box plot.



- **CONCLUSION**

- Based on the testing result, bursting defect inherit due to material degrade (claycoat materials)
- Claycoat materials has low busrting strength compared to existing : 521.8 kPa New 496.4 kPa
- New batch of claycoat has high standard deviation of COBB Test value which is 12.057 compared to OLD of 2.3



KANEPACKAGE PHILIPPINE INC.
QUALITY ASSURANCE DEPARTMENT

T H A N K
Y O U