



## Containerboard Interlaboratory Testing Program

Participant Summary Report #606 (C) - March 2020

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<a href="#"><u>216</u></a>	<a href="#"><u>56G1</u></a>	<a href="#"><u>Ring Crush of Linerboard, Rigid Platen Type, 56 lb Linerboard</u></a>
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Collaborative Testing Services, Inc.  
CONTAINERBOARD INTERLABORATORY TESTING PROGRAM

**INTRODUCTION**

The Interlaboratory Testing Program for Containerboard is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance provided by the Containerboard Group of the American Forest & Paper Association. The tests are conducted on a monthly basis.

For these tests samples of linerboard and corrugating medium, that each have been separately randomized from narrow rolls, are distributed for testing weekly. One weight of medium (26 lb.) is used for Concora Flat Crush Strength, Corrugated Fluted Crush Strength, Ring Crush Strength, and STFI Compression. Two weights of linerboard are tested each month for Mullen Burst, Ring Crush, and STFI Compression: 42 lb. - every month; 36 lb. and 56 lb. - alternate months. The participants return their test results for analysis and receive a monthly report.

Please refer to the section, "EXPLANATION OF TABLES", for definitions of terms and guidelines to interpreting the results.

USE OF AVERAGE MEAN AS A COLLABORATIVE REFERENCE VALUE

The samples of linerboard and corrugating medium, which have been randomized and placed in sealed packages for distribution in this program, may be used as collaborative reference materials. The values most representative of each material are the Cumulative Grand Means in the latest reports, given at the bottom right of each table. Comparisons can only be made within one lot of material; therefore check your measurements against the Cumulative Grand Means with the same lot code as on the packages being tested.

<b>Material</b>	<b>Lot Code</b>	<b>Dates in Use</b>
26 lb Corrugating Medium	CM11	April 2019-Current
	CM92	January 2019-March 2019
35 lb Linerboard	35E1	February 2019-Current
42 lb Linerboard	42F2	February 2020-Current
	42F1	January 2019-January 2020
56 lb Linerboard	56G1	January 2020-Current
	56A2	January 2019-November 2019

**ABOUT CTS**

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in the CTS programs.

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## EXPLANATION OF TABLES

Each analysis is divided into three time spans. On the left side of the table are the individual laboratory results for each week of the month; in the center are each lab's statistical data for the month; and on the right are each lab's cumulative data for up to 16 weeks. At the bottom of the table are the consensus statistics for all the participants for each of the three time spans.

### Definitions of Terms Used

#### Weekly Results

##### Laboratory Data

- WebCode - A six character laboratory identifier used to maintain information on a confidential basis. The WebCode is unique for each cycle and will change for each report. Your WebCode can be found in your Individual Report (Current Month Performance Report) and your datasheet.
- Weekly Means - The average of the test results obtained by the participant for each week that data were reported.

##### Consensus Data

- Wk Mean - For each week, the average of the Means for all the participants, excluding those laboratories flagged with an 'X'.
- Avg SD - For each week, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SD is an indication of the variation of measurements within an average laboratory.
- SD btwn Labs - For each week, the standard deviation of the laboratory Means about the Wk Mean, excluding those laboratories flagged with an 'X'. The SD LABS is an indication of the precision of measurement between the laboratories.
- Labs Incl - The number of laboratory Means included in the Wk Mean for that week.
- Labs Excl - The number of laboratory Means reported but excluded from the Wk Mean for that week because of outlying results ('X' following Mean).
- Labs not rcvd - The number of laboratories failing to report for that week.

#### Monthly Results

##### Laboratory Data

- Mean - For each laboratory, the average of all the weekly Means reported for this month.
- CPV - **Comparative Performance Value**, an indication of how well a laboratory's Mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean). The closer a laboratory's CPV is to zero, the more consistent its results are with the other participants' data.
- SD - For each laboratory, the average of the weekly within-lab standard deviations (SD's) for all reported Weekly Means this month.
- SD Wk - The standard deviation among the laboratory's weekly Means, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.

##### Consensus Data

- Month Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for this month.
- Avg SD - For the current month, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'.
- SD btwn Labs - For the current month, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Group - For the current month, the standard deviation of the laboratory Means within the group about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks) for all the participants, excluding those laboratories flagged with an 'X'.

## Cumulative Results

### Laboratory Data

- Mean - For each lab, the average of all the monthly Means reported for the weeks shown.
- CPV - **Comparative Performance Value**, an indication of how well a laboratory's cumulative mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean).
- SDr - For each laboratory, the average of the weekly within-lab standard deviations (SD's) for the weeks shown.
- SD Wk - The standard deviation among the laboratory's weekly Means for the weeks shown, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.
- Wks - The number of weeks included in the cumulative period.
- Inst - The two letter instrument code. Codes are summarized at the bottom of the last analysis page.

### Consensus Data

- Grand Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for the number of weeks included in the cumulative period.
- Avg SD - For the cumulative period, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'.
- SD btwn Labs - For the cumulative period, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Wks - For the cumulative period, the average of the laboratory between week standard deviations for all the participants, excluding those laboratories flagged with an 'X'.
- Labs Incd - The number of laboratory Means included in the Grand Mean.

**Any laboratory that receives a 'flag' following a mean or standard deviation should refer to the chart below for an explanation of the data flag symbol:**

<u>Flag</u>	<u>Explanation</u>
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Data Flags "X" and "\*" indicate a laboratory's performance on an average value differed from the consensus.

Data Flags "H" and "L" indicate a laboratory's performance on a standard deviation differed from the consensus.

Flags assigned to Weekly Means, Monthly Mean and Cumulative Mean:

- X Excluded from the weekly means, monthly means and/or the cumulative mean. Immediate review of data and/or testing procedure is recommended.
- \* Included in the weekly means, monthly means and/or the cumulative mean; however, lab should review testing procedure and monitor future results.

Flags assigned to Weekly Means:

- H Indicates high within-laboratory standard deviation. The laboratory SD for each week is not shown, but laboratory average SD and consensus average SD values are shown.
- L Indicates low within-laboratory standard deviation. The laboratory SD for each week is not shown, but laboratory monthly average SD and consensus average SD values are shown.

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

- H Indicates high variability between weekly means (high week-to-week variation).
- L Indicates low variability between weekly means (low week-to-week variation).



Containerboard Interlaboratory Testing Program  
Analysis 201

Report #606 (C)  
March 2020

Top to Bottom Box Compression Strength, Corrugated Boxes - BX14

TAPPI Official Test Method T804

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
8G9XGU	551.2	-0.85	45.01	575.7	-0.43	21.85	3	TB
8V9GEL	480.8	-2.08 *	12.38	475.9	-2.49 *	10.23	3	LL
9FPBFR	533.5	-1.16	31.64	581.3	-0.31	54.48	3	ER
A4RPTT	734.0	2.34 *	68.21	656.3	1.24	67.42	3	LS
AYW3XK	652.4	0.92	40.69	678.4	1.70	69.74 H	3	EX
BPBYPK	649.0	0.86	64.01	667.7	1.48	21.00	3	LG
BRCZQG	602.6	0.05	37.68	601.6	0.11	13.13	3	EX
ELZD8N	519.0	-1.41	34.00	537.3	-1.22	25.85	2	LS
FC4U7L	604.4	0.08	49.95	593.0	-0.07	23.58	3	LS
FRH38P	685.6	1.50	64.49	697.5	2.09 *	12.21	3	EX
FYEZQK	618.8	0.33	60.17	587.1	-0.19	28.71	3	ES
GFHRCM	598.8	-0.02	84.63	580.0	-0.34	21.21	3	EX
GQJE4J	517.7	-1.43	28.72	573.5	-0.47	60.97	3	LL
HPM44B	613.9	0.25	38.05	582.3	-0.29	29.63	3	ER
HUEBLJ	563.2	-0.64	36.51	564.0	-0.67	0.72 L	3	ER
L99UUK	619.1	0.34	26.18	611.1	0.31	51.39	3	LG
N7ATHD	622.3	0.39	66.13	609.7	0.28	20.87	3	ET
RBWE2B	606.9	0.12	44.20	603.1	0.14	5.44	2	TE
RVZ6E6	593.1	-0.12	36.05	571.7	-0.51	23.84	3	LM
U2FPC2	609.9	0.18	54.50	558.3	-0.78	48.13	3	LS
VZYRJ3	646.9	0.82	45.10	616.2	0.41	27.51	3	LO
WXA3CU	617.4	0.31	55.09	629.1	0.68	11.60	3	ER
XG32G8	555.0	-0.78	85.01	563.7	-0.67	8.69	3	LS

Consensus (All Labs) Results

Month Mean	599.81	Grand Mean	596.28
Avg SD	51.41	Avg SD Months	34.75
SD btwn Labs	57.32	SD btwn Labs	48.37
Labs Incld	23	Labs Incld	23

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	606.79	44.64	6.98	8
Water based adhesive sealing	685.60	0.00	85.79	1
Clip sealing	589.70	61.49	10.11	14



Containerboard Interlaboratory Testing Program  
Analysis 201

Report #606 (C)  
March 2020

**Top to Bottom Box Compression Strength, Corrugated Boxes - BX14**

TAPPI Official Test Method T804

**Key to Instrument Codes Reported by Participants**

ER	Emerson 6200 Series	ES	Emerson 8510
ET	Emerson 7200	EX	Emerson Apparatus (Model not specified)
LG	TLS / L.A.B. Validator Series	LL	Lansmont 76-5K
LM	Lansmont 122-15k	LO	Lansmont 152-30k
LS	Lansmont Squeezer	TB	TMI Monitor/Compression Tester, Model 17-70
TE	Testometric M500 - 25 KN		



**Containerboard Interlaboratory Testing Program**  
 Analysis 202  
**Edgewise Compressive Strength, by T811, Corrugated Board - EC12**  
 TAPPI Official Test Method T811

**Report #606 (C)**  
**March 2020**

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
47ZUZN	42.1	1.24	0.65	L	45.3	2.03 *	3.00	3	XX
6DFUYX	40.7	0.99	2.14		39.0	0.62	1.74	4	LC
9FPBFR	35.3	0.01	2.64		35.8	-0.08	0.74	4	EN
DLFAZN	37.2	0.36	1.04	L	37.5	0.29	0.69	3	XX
ELZD8N	23.0	-2.22 *	1.69		28.5	-1.71	4.98	H 3	EM
GFHRCM	34.3	-0.18	2.86		35.6	-0.12	0.98	4	LC
H6GQCN	31.1	-0.75	0.88	L	32.3	-0.86	0.95	4	TF
J7QZZE	34.7	-0.09	4.72	H	34.1	-0.45	0.82	4	LD
U2FPC2	40.2	0.89	2.18		39.0	0.62	1.56	4	LC
XG32G8	33.9	-0.24	0.96	L	34.6	-0.34	1.03	4	LD

Consensus (All Labs) Results			
Month Mean	35.26	Grand Mean	36.17
Avg SD	2.30	Avg SD Months	2.10
SD btwn Labs	5.54	SD btwn Labs	4.51
Labs Incd	10	Labs Incd	10

**Key to Instrument Codes Reported by Participants**

EM	Emerson 1200 Series	EN	Emerson 2200
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
TF	TMI Digital Crush Tester, Model 17-19	XX	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated Board - EC12**  
 TAPPI Official Test Method T839

**Report #606 (C)**  
**March 2020**

WebCode	Monthly Results				Cumulative Results					
	Mean	CPV	SD		Mean	CPV	SD	Months	Months	Inst
47ZUZN	42.3	1.21	0.55	L	45.8	2.58 *	3.42	H	3	XX
4MP4MQ	40.3	0.42	1.67		40.3	0.25	1.31		3	EM
63TXTQ	35.3	-1.64	1.64		35.7	-1.69	0.49		2	TD
6DFUYX	41.3	0.79	0.74		40.8	0.46	0.90		4	LC
8G9XGU	42.5	1.28	0.28	L	41.1	0.58	1.10		4	LD
8V9GEL	37.6	-0.69	1.68		37.7	-0.82	1.21		4	LC
9FPBFR	34.5	-1.98 *	3.07	H	37.2	-1.02	2.05		4	EN
A4RPTT	42.2	1.17	1.69		42.7	1.24	1.54		4	EM
AHR9QK	38.2	-0.46	1.89		36.0	-1.56	4.58	H	4	LC
AYW3XK	38.9	-0.19	1.76		41.9	0.93	2.10		4	CT
BPBYPK	40.7	0.57	2.57		41.6	0.80	0.71		4	EM
BRCZQG	37.0	-0.95	1.72		37.6	-0.87	1.22		3	LD
C39MVJ	42.8	1.42	1.58		42.2	1.06	0.39		4	LD
ELZD8N	38.9	-0.17	0.77		38.3	-0.60	0.57		3	EM
FYEZQK	40.9	0.64	1.52		41.0	0.53	1.73		4	LD
GFHRCM	37.6	-0.68	1.87		38.2	-0.64	0.56		4	LC
GPR2YF	42.4	1.27	1.21		41.3	0.68	0.88		4	TG
GQJE4J	40.0	0.26	1.55		41.1	0.61	1.09		3	BU
H6GQCN	36.3	-1.23	0.67	L	36.8	-1.22	0.39		4	TD
HPM44B	36.4	-1.17	1.34		37.7	-0.84	2.26		4	LD
HUEBLJ	41.7	0.97	1.57		40.1	0.17	1.97		4	LD
J7QZZE	39.1	-0.11	2.40		38.4	-0.56	1.24		4	LD
KJA3VC	37.7	-0.66	1.25		37.9	-0.76	0.16	L	3	EM
L99UUK	41.9	1.04	1.45		41.7	0.85	0.98		4	TJ
MWNAK9	37.3	-0.82	1.87		38.7	-0.41	0.96		4	LD
N7ATHD	40.7	0.57	1.53		43.4	1.55	1.86		4	TD
NND8Y8	37.7	-0.66	2.61	H	38.1	-0.65	0.48		4	XX
RBWE2B	40.0	0.28	1.17		40.4	0.29	0.50		3	LD
REVWY4	37.3	-0.81	1.01		38.1	-0.68	1.03		2	TK
RVZ6E6	40.1	0.33	1.00		39.7	0.01	0.45		4	EM
TYVD2C	40.8	0.59	0.91		40.5	0.35	1.12		4	EM
U2FPC2	41.0	0.69	2.25		41.0	0.53	0.45		4	LC
UJZFB2	33.0	-2.60 *	1.66		33.9	-2.42 *	1.22		4	XX
VZYRJ3	39.5	0.05	1.51		39.9	0.07	0.54		4	LD
WXA3CU	38.6	-0.30	1.31		38.6	-0.44	0.21	L	4	EM
XG32G8	41.5	0.87	1.53		41.3	0.69	0.65		4	LD
YB9QHT	37.6	-0.72	1.05		39.0	-0.30	1.51		4	IM
ZL8JR7	42.8	1.41	1.82		42.7	1.25	0.83		4	TD





Containerboard Interlaboratory Testing Program  
Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated Board - EC12**  
TAPPI Official Test Method T839

**Report #606 (C)**  
**March 2020**

Consensus (All Labs) Results			
Month Mean	39.32	Grand Mean	39.69
Avg SD	1.62	Avg SD Months	1.46
SD btwn Labs	2.45	SD btwn Labs	2.39
Labs Incl	38	Labs Incl	38

**Key to Instrument Codes Reported by Participants**

<b>BU</b>	Buchel Digital Crush Tester	<b>CT</b>	Con-Ten
<b>EM</b>	Emerson 1200 Series	<b>EN</b>	Emerson 2200
<b>IM</b>	Instron 5500 Series	<b>LC</b>	L&W Crush Tester 48
<b>LD</b>	L&W Crush Tester 248	<b>TD</b>	TMI Digital Crush Tester, Model 17-09
<b>TG</b>	TMI Digital Crush Tester, 17-76	<b>TJ</b>	TLS Compression Tester, Model CDM-5
<b>TK</b>	TLS Compression Tester, Model 5184	<b>XX</b>	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42F2**  
 TAPPI Official Test Method T807

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
2CERGX	114.3	116.2	114.4	No DATA	115.0	1.30	7.0	1.1	116.0	1.71	6.3	1.6	7	AH
33JAFU_AL	110.1	106.8	109.8	110.3	109.2	-0.16	7.3	1.6	109.2	-0.16	7.3	1.6	4	AL
3GY8KU	109.4	104.5	105.1	114.8	108.5	-0.35	8.5	4.8	108.1	-0.45	8.6	4.1	8	LZ
3PWZTN	117.4	106.7 H	119.2 *	114.9	114.5	1.19	10.2	5.5	114.7	1.34	10.3	3.8	8	LA
47ZUZN	115.0	115.2	114.9	114.5	114.9	1.29	6.4	0.3 L	114.2	1.20	5.9	1.0	8	LC
6MZ79P	111.6 L	110.2 L	110.4	110.2 L	110.6	0.19	3.3	0.7	110.0	0.04	3.6	1.3	8	XX
6XM6YV_AL	115.8	115.7	116.7	115.4	115.9	1.54	7.5	0.6	113.1	0.91	8.7	4.2	8	AL
7VDEAQ	111.3	118.4	117.8	No DATA	115.8	1.53	7.5	3.9	116.3	1.78	8.4	2.4	7	TB
8DNQEM	114.6	110.7	110.5	114.6	112.6	0.70	8.6	2.3	111.5	0.45	10.0	3.1	8	LA
8DNQEM_AL	76.5 X	87.3 XH	75.0 X	107.7	86.6	-5.91 X	9.3	15.1 H	85.0	-6.81 X	9.2	10.1 H	8	AL
9J97HJ	105.5 H	109.2	109.4	108.6	108.2	-0.43	11.5	1.8	107.3	-0.70	11.4	3.1	8	LA
ACK3NM	110.5	111.7	111.9	109.0	110.8	0.24	8.1	1.3	110.0	0.04	8.7	2.3	8	LA
AHR9QK_AL	116.6	116.3	113.3	115.2	115.4	1.41	9.0	1.5	114.9	1.40	9.3	2.5	8	AL
AQ8APU	103.6	109.0	101.3	109.6	105.9	-1.01	9.1	4.1	106.7	-0.86	8.2	3.4	8	LA
AYW3XK	110.0	112.0	108.0	108.5	109.6	-0.06	8.7	1.8	108.7	-0.31	9.7	2.1	8	XX
BMH32Q	112.7	115.9	110.0	113.9	113.1	0.84	8.1	2.5	112.6	0.75	9.5	2.5	8	AH
BRCZQG	109.2	115.2	109.6	108.4	110.6	0.19	8.2	3.1	110.2	0.09	9.1	3.4	8	AH
C39MVJ_AL	118.7	115.6	117.8	116.6	117.2	1.87	7.1	1.4	117.5	2.09 *	7.0	1.6	8	AL
CDQ8EF	111.1	115.0	110.9	111.5	112.1	0.58	9.9	1.9	112.6	0.76	8.5	1.4	8	LC
CNCBLF	109.9	108.9	109.8 L	109.9	109.6	-0.06	4.6	0.5 L	110.1	0.07	4.9	1.0	8	LA
CXFLVQ	102.3	104.9	105.7	108.6	105.4	-1.14	7.5	2.6	103.8	-1.65	7.2	3.5	8	AH
E3K48N	103.6	102.8	103.7	100.2 *	102.6	-1.85	6.4	1.6	101.6	-2.25 *	8.5	3.0	8	LA
E8ZCVM	114.4	114.6	113.6 L	114.4	114.3	1.12	5.3	0.4 L	114.7	1.34	5.1	0.6 L	8	RE
FPDFPD	109.7	104.6	108.6	105.7 L	107.1	-0.69	7.3	2.4	106.2	-0.98	8.2	1.9	8	XX
FVK48L	107.5	No DATA	No DATA	No DATA	107.5	-0.60	8.8	0.0	108.6	-0.34	10.4	1.5	2	LC
FYEZQK	106.5	104.9	106.0	105.0	105.6	-1.08	8.7	0.8	106.2	-0.98	9.3	1.1	8	LA
H6GQCN	113.0	114.7	113.3	116.3	114.3	1.14	10.2	1.5	114.2	1.20	9.3	1.5	8	XX
HFXBWK	113.0 L	113.3	113.7	112.3	113.1	0.82	5.8	0.6	113.5	1.02	6.5	0.6 L	8	LA
HPM44B	106.6	106.4	111.3	110.6	108.7	-0.29	10.1	2.6	105.7	-1.12	14.4	4.2	8	LZ
HUEBLJ	113.0	118.0	112.0	110.3	113.3	0.89	7.8	3.3	111.4	0.44	8.6	3.8	8	AH
J7QZZE	105.4	109.3	106.9	108.6	107.6	-0.58	7.8	1.8	106.9	-0.80	7.7	1.8	8	LA
JD492F_AL	110.6	109.5	111.5	109.1	110.2	0.08	7.7	1.1	110.6	0.23	7.8	2.3	8	AL
KRKJ8H	112.0	110.2	109.1	108.2	109.9	0.01	6.3	1.6	110.7	0.25	6.5	1.7	8	TP
KTWY2J	109.4	110.1	110.9	108.2	109.7	-0.05	6.1	1.1	110.0	0.05	7.0	0.9 L	8	AH
L8PAK8_AL	110.7	115.6	109.3 H	107.6	110.8	0.25	10.0	3.4	109.3	-0.14	9.2	3.7	8	AL



**Containerboard Interlaboratory Testing Program**  
 Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42F2**  
 TAPPI Official Test Method T807

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
LD3VTE	107.8	105.2	106.6	106.5	106.5	-0.84	8.4	1.0	106.2	-0.98	8.6	1.2	8	LC
LU293E	111.1	101.5	99.4 *	99.5 *	102.9	-1.77	10.4	5.5	104.9	-1.34	9.0	4.3	8	LC
M2H4HA	106.6	109.8	107.5	115.0	109.7	-0.03	8.9	3.8	108.2	-0.44	11.6	17.3 H	8	LB
N4LY2C	108.6	107.6	111.7	109.9	109.5	-0.10	9.4	1.8	109.3	-0.14	9.0	1.5	8	LA
NL7PZC	107.4	111.6	105.1	100.8	106.2	-0.92	7.7	4.5	106.0	-1.05	8.3	3.3	8	LC
NY7QDD	110.8	114.3	108.0 L	111.2	111.1	0.31	10.6	2.6	112.6	0.77	9.6	3.2	8	TB
PFD8Z6	109.2	102.4	NO DATA	NO DATA	105.8	-1.03	10.0	4.8	110.5	0.20	9.0	4.9	6	LC
PK82W7	105.5	104.9	105.8	100.8	104.2	-1.43	8.2	2.3	103.4	-1.77	7.4	2.1	8	LJ
PLG7CF_AL	108.8	107.9	118.5	112.6	111.9	0.53	8.0	4.8	111.9	0.58	8.0	4.8	4	AK
PPGH9F	98.0 *	101.0	107.8	98.3 *	101.3	-2.18 *	8.1	4.6	104.0	-1.60	10.9	5.4	8	LA
QDZUV9	99.0 *	103.9	103.8	103.8	102.6	-1.84	10.0	2.4	105.5	-1.17	10.2	3.9	8	LC
QUN892	110.6	113.5	109.2 H	110.3	110.9	0.27	10.4	1.8	109.9	0.04	10.1	2.0	8	LZ
U2FPC2	108.5	107.9	100.3 *	106.9	105.9	-1.00	8.6	3.8	107.5	-0.65	8.9	3.6	8	AH
ULNRA8	114.9	109.1	108.4	112.0	111.1	0.32	9.9	2.9	112.7	0.78	10.1	4.2	8	LA
V82YY6	113.9	113.7	112.0	108.3	112.0	0.54	8.7	2.6	111.8	0.56	8.4	2.6	8	LA
V82YY6_AL	109.5	112.8	113.1	112.5	111.9	0.54	7.6	1.7	112.4	0.70	6.9	1.8	8	XX
X4RV2Y_AL	116.7	113.7	112.8	110.0	113.3	0.88	7.3	2.8	110.7	0.25	7.3	3.4	8	AL
XG32G8	104.4	101.2	104.0	104.9	103.6	-1.58	9.5	1.6	104.8	-1.38	9.0	2.1	8	LA
XLRHTX	110.0 L	109.9	110.4	107.1	109.4	-0.13	3.8	1.5	109.5	-0.08	3.7	1.4	8	LA
Z8ZVBV_AL	122.0 *H	119.3	117.0	106.0	116.1	1.59	18.4	7.0 H	114.2	1.20	14.4	5.1	8	AL
ZTJZVY_AL	105.8	104.7	107.8	106.0	106.1	-0.96	9.6	1.3	106.4	-0.94	9.9	1.7	8	XX

Consensus (All Labs) Results														
Wk Mean	110.07	110.15	109.92	109.25	Month Mean	109.84			Grand Mean	109.80				
Avg SDr	9.77	8.22	8.34	8.00	Avg SD	8.65			Avg SD	8.81				
SD btwn Labs	4.60	4.87	4.49	4.43	SD btwn Labs	3.93			SD btwn Labs	3.65				
Labs Incd	55	54	53	52	SD btwn Wks	2.85			SD btwn Wks	3.70				
Labs Exclcd	1	1	1	0	Labs Incd	55			Labs Incd	55				
Labs not Rcvd	0	1	2	4										



Containerboard Interlaboratory Testing Program  
Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42F2**  
TAPPI Official Test Method T807

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>AH</b>	Perkins Model AH	<b>AK</b>	L & W Autoline 300
<b>AL</b>	L & W Autoline 400	<b>LA</b>	L&W Bursting Strength Tester
<b>LB</b>	L&W Burst-O-Matic	<b>LC</b>	L&W Autoline (205 Enrollment)
<b>LJ</b>	L&W Bursting Strength Tester J-Type	<b>LZ</b>	L&W (model not specified)
<b>RE</b>	Regmed/Mullen Tester	<b>TB</b>	TMI Monitor/Burst 1000
<b>TP</b>	Technidyne PROFILE/Plus	<b>XX</b>	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 206  
**Bursting Strength (Mullen), 56 lb Linerboard - 56G1**  
 TAPPI Official Test Method T807

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
2CERGX	119.1	119.5	123.7	* NO DATA	120.8	1.75	8.6	2.5	118.8	1.36	7.5	2.5	7	AH
33JAFU_AL	113.8	113.3	113.9	113.9	113.7	-0.15	7.1	0.3 L	113.7	-0.13	7.1	0.3 L	4	AL
3GY8KU	117.7	116.4	115.4	119.7	117.3	0.82	9.9	1.9	118.0	1.12	10.3	3.0	8	LZ
3PWZTN	116.9	125.6 *	118.4	111.7	118.2	1.05	12.3	5.7	117.9	1.09	11.8	5.6	8	LA
6MZ79P	119.7 L	119.0 L	122.1	124.0 *	121.2	1.86	4.4	2.3	121.8	2.23 *	4.5	1.9	8	XX
6XM6YV_AL	117.7	116.2	115.6	115.5	116.3	0.54	8.5	1.0	117.5	0.99	9.0	2.6	8	AL
7VDEAQ	123.3	113.4	112.4	NO DATA	116.4	0.56	8.3	6.0	117.5	0.97	8.6	4.5	7	TB
8DNQEM	110.3	113.0	119.4	112.2	113.7	-0.14	10.2	3.9	113.1	-0.31	10.3	2.9	8	AH
8DNQEM_AL	80.3 X	81.9 XL	81.6 X	110.2	88.5	-6.90 X	7.8	14.5 H	88.6	-7.42 X	8.9	9.6 H	8	AL
9J97HJ	112.2	111.6	110.7	113.1 H	111.9	-0.64	14.0	1.0	111.9	-0.66	14.0	1.0	4	LA
ACK3NM	110.9	113.9	114.2	113.0	113.0	-0.34	11.4	1.5	114.8	0.19	11.2	2.2	8	LA
AHR9QK_AL	119.4	120.0	117.5	111.0	117.0	0.73	11.1	4.1	117.0	0.82	11.1	4.1	4	AL
AQ8APU	103.8 *H	113.2	110.1	113.3	110.1	-1.12	12.9	4.4	109.3	-1.40	12.4	3.2	8	XX
AYW3XK	112.0	110.5	114.5 H	109.0	111.5	-0.74	12.7	2.3	110.0	-1.21	12.7	2.8	8	XX
BMH32Q	124.5 *	114.8	118.0	120.5	119.5	1.39	9.0	4.1	119.0	1.42	9.0	3.5	8	AH
BRCZQG	114.0	110.8	114.0	110.4	112.3	-0.52	9.6	2.0	112.6	-0.46	8.9	3.1	8	AH
C39MVJ_AL	123.8 *	124.8 *	119.1	118.0	121.4	1.92	8.6	3.4	119.4	1.54	10.2	3.5	8	AL
CDQ8EF	112.7	119.3	113.5	119.0	116.1	0.50	9.6	3.5	116.1	0.56	9.2	2.6	8	LC
CNCBLF	114.4	114.1	114.3	114.2	114.2	0.00	6.1	0.1 L	112.8	-0.41	5.0	1.9	8	LA
CXFLVQ	110.8	112.7	109.6	102.1 *	108.8	-1.46	9.2	4.7	109.6	-1.33	9.2	3.8	8	AH
E3K48N	104.0 *	106.6	108.4	104.5 *	105.9	-2.24 *	9.7	2.0	107.6	-1.90	10.9	2.5	8	LA
E8ZCVM	117.6 L	117.4 L	115.4	116.8	116.8	0.68	4.3	1.0	117.2	0.89	6.0	0.9 L	8	RE
FPDFPD	113.6	109.9	114.7 L	111.3	112.4	-0.51	8.3	2.2	114.2	0.01	10.1	4.2	8	XX
FVK48L	112.4	NO DATA	NO DATA	NO DATA	112.4	-0.50	8.4	0.0	112.4	-0.51	8.4	0.0	1	XX
FYEZQK	115.8	107.4	112.2	116.1	112.9	-0.37	10.1	4.1	114.2	0.01	10.3	3.6	8	LA
H6GQCN	115.3	118.6	119.4	116.1 H	117.4	0.83	12.9	2.0	116.0	0.53	13.3	2.4	8	XX
HFXBWK	116.3	116.3	115.5	117.8	116.5	0.60	6.7	1.0	116.2	0.60	6.5	0.7 L	8	LA
HPM44B	111.0	109.5	110.1	110.8	110.3	-1.05	10.9	0.7	110.0	-1.22	11.7	1.3	8	LZ
HUEBLJ	116.6	113.6	118.1	118.9	116.8	0.68	9.0	2.3	113.3	-0.26	8.7	4.8	8	AH
J7QZZE	112.0	110.1	112.0	112.4	111.6	-0.70	9.6	1.0	111.3	-0.82	9.9	1.6	8	LA
JD492F_AL	115.0	115.0	115.0	112.4	114.3	0.03	10.1	1.3	113.5	-0.20	9.5	1.7	8	AL
KRKJ8H	112.8	113.1	110.7	114.5	112.8	-0.40	6.9	1.6	112.5	-0.47	7.1	1.5	8	TP
KTWY2J	112.1	112.1	111.2	114.8	112.6	-0.46	6.9	1.6	112.7	-0.42	6.6	1.2	8	AH
L8PAK8_AL	115.0	106.3 H	111.6 H	117.4	112.6	-0.45	19.8	4.8	112.6	-0.45	19.8	4.8	4	AL
LD3VTE	113.3	114.0	111.8	113.9	113.2	-0.27	9.9	1.0	111.9	-0.66	11.1	3.1	8	LC



**Containerboard Interlaboratory Testing Program**  
 Analysis 206  
**Bursting Strength (Mullen), 56 lb Linerboard - 56G1**  
 TAPPI Official Test Method T807

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
LU293E	107.8	110.9	109.9	108.2	109.2	-1.36	11.8	1.5	111.5	-0.76	10.8	3.0	8	LC
M2H4HA	111.0	117.1	105.6 *	116.9	112.6	-0.44	9.2	5.5	112.2	-0.57	9.3	6.9 H	8	LB
N4LY2C	112.8	111.9	117.8	116.0	114.6	0.10	9.4	2.8	114.4	0.08	8.7	2.3	8	LA
NL7PZC	112.5	112.9	111.9	110.1	111.9	-0.64	9.9	1.2	112.7	-0.43	9.3	1.9	8	LA
NY7QDD	119.4	117.3	111.4 L	119.1	116.8	0.68	8.5	3.7	115.4	0.35	9.8	3.1	8	TB
PFD8Z6	111.0	117.3	No DATA	No DATA	114.1	-0.03	11.4	4.4	116.4	0.64	11.8	4.0	6	LC
PK82W7	99.2 XH	105.0 *	109.9	104.8	104.7	-2.55 *	12.2	4.4	106.2	-2.30 *	11.1	4.1	7	LJ
PLG7CF_AL	122.6	112.4	117.0	111.0	115.8	0.40	11.0	5.2	115.8	0.47	11.0	5.2	4	AK
PPGH9F	106.9	112.5	114.9	106.8	110.3	-1.06	6.7	4.1	108.4	-1.67	8.0	4.1	8	LA
QDZUV9	108.4	115.2	107.9	107.7	109.8	-1.20	10.7	3.6	110.4	-1.09	10.8	3.6	8	LC
QUN892	114.9	118.1	111.5	118.5	115.8	0.41	9.6	3.2	114.2	0.02	10.7	3.2	8	LZ
U2FPC2	115.0	109.9	105.8 *	108.3	109.8	-1.21	10.1	3.9	110.0	-1.21	9.7	2.7	8	AH
ULNRA8	115.3	120.5	120.4	114.5	117.7	0.92	12.2	3.2	115.1	0.27	11.5	6.0	8	LA
V82YY6	110.5	114.6	113.7	112.8	112.9	-0.36	8.4	1.8	113.5	-0.20	9.9	5.0	8	LA
V82YY6_AL	110.6	119.1	117.2	118.2	116.3	0.55	7.3	3.8	116.3	0.63	7.3	3.8	4	XX
X4RV2Y_AL	117.6	112.6	118.6	117.3	116.5	0.61	6.9	2.7	114.9	0.21	7.5	3.1	8	AL
XG32G8	109.9 H	114.8	113.5	109.3	111.9	-0.64	11.0	2.7	113.0	-0.32	11.1	2.4	8	LA
XLRHTX	125.0 *L	122.8 L	122.8 *L	121.7 L	123.1	2.36 *	3.8	1.4	122.7	2.49 *	3.7	1.2	8	LA
Z8ZVBV_AL	118.8	114.5	122.2	119.9	118.9	1.23	8.7	3.2	119.2	1.46	9.6	3.0	8	AL
ZTJZVY_AL	113.3	119.1	117.4	112.4	115.6	0.35	9.4	3.2	115.6	0.41	9.4	3.2	4	XX

Consensus (All Labs) Results										
Wk Mean	114.40	114.54	114.46	113.76	Month Mean	114.25		Grand Mean	114.15	
Avg SDr	9.53	10.40	9.55	9.98	Avg SD	9.88		Avg SD	10.01	
SD btwn Labs	4.71	4.37	4.25	4.65	SD btwn Labs	3.73		SD btwn Labs	3.44	
Labs Incl	53	53	52	51	SD btwn Wks	3.14		SD btwn Wks	3.34	
Labs Excl	2	1	1	0	Labs Incl	54		Labs Incl	54	
Labs not Rcvd	0	1	2	4						



Containerboard Interlaboratory Testing Program  
Analysis 206  
**Bursting Strength (Mullen), 56 lb Linerboard - 56G1**  
TAPPI Official Test Method T807

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>AH</b>	Perkins Model AH	<b>AK</b>	L & W Autoline 300
<b>AL</b>	L & W Autoline 400	<b>LA</b>	L&W Bursting Strength Tester
<b>LB</b>	L&W Burst-O-Matic	<b>LC</b>	L&W Autoline (206 Enrollment)
<b>LJ</b>	L&W Bursting Strength Tester J-Type	<b>LZ</b>	L&W (model not specified)
<b>RE</b>	Regmed/Mullen Tester	<b>TB</b>	TMI Monitor/Burst 1000
<b>TP</b>	Technidyne PROFILE/Plus	<b>XX</b>	Instrument make/model not specified by lab

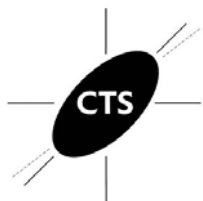


**Containerboard Interlaboratory Testing Program**  
 Analysis 215  
**Ring Crush, 42 lb Linerboard - 42F2**  
 TAPPI Official Test Method T822

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2CERGX	87.7	90.5	89.9	No DATA	89.4	-0.25	2.6	1.5	89.1	-0.41	2.5	1.0	7	LG
2VRAR3	91.7	92.6	91.5	95.1	92.7	0.67	3.0	1.7	88.6	-0.53	2.4	4.6	8	RS
33JAFU	87.7 H	91.0 H	89.1 H	91.2 H	89.8	-0.14	10.1	1.7	89.5	-0.29	8.7	1.5	8	LC
3GY8KU	88.3	87.4	88.4	90.5	88.6	-0.45	3.5	1.3	89.1	-0.39	3.1	2.0	8	LC
3PWZTN	96.1	96.1	95.2	96.0	95.8	1.53	3.0	0.4 L	96.2	1.47	2.7	0.6 L	8	LD
3WDFKY	88.6	88.2	86.1	91.1	88.5	-0.49	4.4	2.0	88.5	-0.54	4.2	1.4	8	LD
3ZG8UY	86.0	86.5	83.5	85.8	85.5	-1.32	3.5	1.3	85.4	-1.37	3.8	1.1	8	LD
6DFUYX	87.1	85.8	88.3	87.8	87.3	-0.83	2.7	1.1	87.6	-0.80	2.9	0.9	8	LC
6MZ79P	82.6 *	79.9 *L	82.6	84.5	82.4	-2.16 *	2.6	1.9	84.6	-1.56	2.7	4.5	7	LD
6XM6YV	92.9	92.7	88.3	88.1	90.5	0.06	3.2	2.7	107.4	4.39 X	3.6	18.2 H	8	LC
74NVKX	95.1	96.3	94.7	95.6	95.4	1.41	2.9	0.7	96.6	1.56	2.9	2.6	8	LZ
7L3CNQ	91.4 H	90.8 H	89.6 H	86.8 H	89.7	-0.17	8.4	2.0	95.0	1.14	6.3	5.9 H	8	TU
7VDEAQ	96.5	100.9 *	No DATA	No DATA	98.7	2.30 *	2.1	3.1	98.8	2.13 *	3.2	2.6	6	LX
9FPBFR	83.2 L	84.4	84.6	82.8	83.7	-1.79	2.5	0.9	84.8	-1.51	2.4	1.5	8	EN
9J97HJ	103.9 X	99.9 *	99.4 *	102.1 X	101.3	3.03 X	2.6	2.0	100.2	2.51 *	2.9	1.9	8	LD
ACK3NM	89.0	85.4	85.7	86.1	86.6	-1.02	2.5	1.7	87.9	-0.72	2.8	2.2	8	LC
AHR9QK	73.9 X	74.0 X	76.7 X	84.3 L	77.2	-3.57 X	3.7	4.9	76.1	-3.78 X	4.3	3.5	8	LC
AQ8APU	85.8	83.9	91.4	83.7	86.2	-1.12	4.3	3.6	86.7	-1.03	4.0	2.8	7	LD
C39MVJ	No DATA	No DATA	93.9	95.1	94.5	1.15	2.4	0.8	92.7	0.56	2.2	1.7	6	LD
CDBNUH	71.4 X	70.8 X	71.6 X	72.0 X	71.5	-5.15 X	4.0	0.5	72.1	-4.85 X	3.7	0.9	8	EM
CDQ8EF	93.8	93.2	93.4	93.1	93.4	0.85	2.6	0.3 L	93.0	0.61	2.5	0.9	8	LD
CNCBLF	94.5 L	92.4	91.5	87.8 L	91.5	0.35	1.8	2.8	92.0	0.35	2.1	2.0	8	LZ
CXFLVQ	71.8 XH	97.8	101.9 *	94.6	91.5	0.34	5.2	13.5 H	95.2	1.20	4.6	9.8 H	8	LZ
E2A2KP	94.7	96.7	95.7	92.7	95.0	1.28	3.0	1.7	92.9	0.59	2.9	2.9	8	LD
E8ZCVM	93.8 L	94.4	94.2	93.9	94.1	1.04	2.1	0.2 L	95.1	1.17	2.4	1.1	8	LZ
EQPUJE	86.6	87.8	84.7	86.5	86.4	-1.06	4.0	1.3	86.5	-1.07	3.8	0.9	8	EX
FVK48L	93.9	98.2	No DATA	No DATA	96.0	1.58	3.0	3.0	96.0	1.42	3.0	3.0	2	MB
GPR2YF	92.3	94.3	92.6	92.6	92.9	0.73	2.7	0.9	92.6	0.53	2.8	0.9	8	TH
HFXBWK	91.2	93.5	93.1	91.5	92.3	0.56	3.2	1.1	92.6	0.52	3.2	0.9	8	LD
HPM44B	90.3	87.7	90.8	92.1	90.2	-0.01	2.6	1.8	91.4	0.21	2.7	1.9	8	LD
HUEBLJ	89.4	87.7	88.7	90.1	89.0	-0.36	2.5	1.0	88.2	-0.63	2.6	1.1	8	LD
J7QZZE	87.0	88.2	88.1	88.9	88.0	-0.61	2.3	0.8	88.5	-0.54	2.5	1.3	8	LD
JD492F	88.4	90.4	92.6	91.2	90.7	0.10	3.1	1.8	91.3	0.17	2.9	2.0	8	LZ
KRKJ8H	88.2	88.5	88.3	92.9	89.5	-0.22	3.6	2.3	90.1	-0.13	3.5	1.7	8	TJ
LD3VTE	89.8	88.5	88.2	88.7	88.8	-0.40	3.1	0.7	87.3	-0.86	3.2	1.7	8	LD





**Containerboard Interlaboratory Testing Program**  
 Analysis 215  
**Ring Crush, 42 lb Linerboard - 42F2**  
 TAPPI Official Test Method T822

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
LU293E	88.0	88.7	94.3	91.9	90.7	0.12	2.9	2.9	92.1	0.38	3.3	2.6	8	LD
M2H4HA	93.0	94.7	98.7	97.8 *	96.0	1.58	3.0	2.6	94.1	0.91	3.1	3.7	8	LC
NL7PZC	88.3 L	89.1	90.6	92.5	90.1	-0.04	2.6	1.8	90.3	-0.09	2.6	1.4	8	LD
NY7QDD	No DATA	91.9	No DATA	91.0	91.5	0.32	4.6	0.6	91.7	0.27	4.5	3.3	4	LD
PFD8Z6	91.1	91.3	91.3	94.2	92.0	0.47	3.0	1.5	91.9	0.33	2.9	1.1	8	LD
PK82W7	91.3	90.5	90.6	90.4	90.7	0.11	2.4	0.4 L	87.6	-0.80	3.4	3.5	8	LD
RBWE2B	94.0 L	92.9 L	93.8 L	94.0	93.7	0.93	1.4	0.5	93.7	0.80	1.4	0.5 L	4	LD
REVWY4	85.5 L	86.2 L	86.6 L	85.9 L	86.0	-1.17	1.2	0.5	85.2	-1.41	1.2	0.9	8	MB
TYVD2C	89.5	88.5	90.8	88.9	89.4	-0.23	3.3	1.0	90.2	-0.10	3.0	1.4	8	EM
U2FPC2	89.5	89.9	87.8	89.1	89.1	-0.33	2.9	0.9	89.2	-0.36	2.7	1.2	8	LC
ULNRA8	94.9	95.0	95.3	97.8 *	95.8	1.50	2.4	1.4	95.8	1.35	2.3	1.0	8	LZ
V82YY6	90.5	87.9	87.2	87.8	88.3	-0.53	2.7	1.4	88.2	-0.62	2.9	1.0	8	LD
VHKBGA	88.4	88.0	85.7	87.8	87.5	-0.77	2.0	1.2	87.5	-0.82	2.0	1.2	4	LD
VTK7BY	84.2 H	79.6 *H	95.0	77.6 XH	84.1	-1.69	8.7	7.8 H	85.3	-1.40	8.8	6.1 H	8	MB
XG32G8	93.1	92.0 L	92.0	93.1	92.6	0.62	1.9	0.6	91.1	0.13	2.4	1.9	8	LD
XLRHTX	82.3 *	86.8	82.4	82.2 *	83.4	-1.87	2.0	2.3	83.5	-1.85	2.0	1.6	8	TU
YDXTP3	92.2	88.6	92.9	89.0	90.7	0.11	3.5	2.2	91.5	0.24	3.3	1.8	8	EN
ZTJZVY	87.7	88.6	86.5	87.9	87.7	-0.71	2.9	0.9	87.9	-0.70	2.8	0.7 L	8	LD

Consensus (All Labs) Results													
Wk Mean	89.94	90.43	90.57	90.26	Month Mean	90.27		Grand Mean	90.61				
Avg SDr	3.57	3.75	3.47	3.36	Avg SD	3.64		Avg SD	3.47				
SD btwn Labs	3.58	4.54	4.30	3.88	SD btwn Labs	3.65		SD btwn Labs	3.83				
Labs Incl	47	50	48	47	SD btwn Wks	2.75		SD btwn Wks	2.69				
Labs Excl	4	2	2	3	Labs Incl	50		Labs Incl	50				
Labs not Rcvd	2	1	3	3									

**Key to Instrument Codes Reported by Participants**

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LG	L&W 753
LX	L&W 506	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	RS	Regmed Digital Crush Tester CT-2000
TH	TMI Compression Tester, Model 17-76	TJ	TLS Compression Tester, Model CDM-5
TU	TMI Universal Crush Tester (TMI K440)		



Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 56 lb Linerboard - 56G1

TAPPI Official Test Method T822

Report #606 (C)

March 2020

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2CERGX	127.5	131.4	134.5	NO DATA	131.1	-0.64	2.8	3.5	131.7	-0.60	3.2	2.4	7	LY
2VRAR3	138.2	135.6 L	137.1	138.7 L	137.4	0.45	2.0	1.4	134.7	-0.05	1.8	3.0	8	RS
33JAFU	144.5	141.7 H	143.2	145.1 H	143.6	1.54	7.6	1.5	140.3	0.97	9.8	3.8	8	LC
3GY8KU	126.3	132.5	129.4	130.9	129.8	-0.88	3.9	2.6	129.0	-1.10	3.9	2.1	8	LC
3PWZTN	142.8	142.8	143.8	143.3	143.2	1.46	4.3	0.5 L	142.8	1.43	4.6	2.3	8	LD
3WDFKY	132.0	126.7	130.5	132.3	130.4	-0.77	3.7	2.6	132.3	-0.49	4.7	3.2	8	LD
3ZG8UY	129.6	129.9	128.9	132.8	130.3	-0.79	5.9	1.7	129.4	-1.02	5.9	1.7	8	LD
6DFUYX	131.0	131.9	132.5	133.2	132.1	-0.46	3.0	0.9	131.7	-0.60	3.3	0.9 L	8	LC
6MZ79P	121.5 *	119.5 *	123.3 *	122.1 *	121.6	-2.30 *	4.4	1.6	122.6	-2.27 *	4.5	2.2	7	LD
6XM6YV	134.8	134.0	128.1	134.7	132.9	-0.33	3.6	3.2	133.9	-0.20	3.8	2.6	8	LC
74NVKX	147.1 *	147.0 *	147.0	146.2	146.8	2.09 *	3.4	0.4 L	143.7	1.60	4.4	3.4	8	LZ
7L3CNQ	127.8 H	131.8 H	116.4 XH	128.6 H	126.1	-1.51	14.9	6.7 H	134.6	-0.07	11.1	10.1 H	8	TU
7VDEAQ	144.6	146.4	NO DATA	NO DATA	145.5	1.86	4.5	1.3	147.0	2.20 *	4.4	1.7	5	LY
9FPBFR	122.7	124.8	122.4 *	120.2 *	122.5	-2.14 *	3.4	1.9	122.3	-2.32 *	3.8	2.8	8	EN
9J97HJ	148.9 *	148.7 *	149.0 *	147.4 *	148.5	2.38 *	4.4	0.8	148.5	2.48 *	4.4	0.8 L	4	LD
ACK3NM	137.8	122.4 *	127.3	128.2	128.9	-1.02	3.4	6.4 H	130.9	-0.76	3.7	5.0	8	LC
AHR9QK	110.9XH	111.8 XH	109.5 XH	118.8 *	112.8	-3.84 X	9.5	4.1	113.5	-3.93 X	8.4	4.8	8	LC
AQ8APU	130.3	128.7	136.9	136.7	133.2	-0.29	3.8	4.3	134.9	-0.01	4.1	7.0 H	8	LD
C39MVJ	NO DATA	NO DATA	135.6	138.3 L	137.0	0.38	2.5	1.9	134.4	-0.11	3.5	2.2	6	LD
CDBNUH	112.4 X	110.8 X	112.4 X	112.1 X	111.9	-3.98 X	4.4	0.8	112.7	-4.09 X	4.5	1.1	8	EM
CDQ8EF	138.3	139.5	138.3	137.2	138.3	0.61	4.0	0.9	137.4	0.44	4.1	1.3	8	LD
CNCBLF	136.3	135.6	136.2	136.1	136.1	0.22	5.0	0.3 L	136.9	0.35	4.4	2.7	8	LZ
CXFLVQ	133.5 H	140.2	147.9 *	144.8	141.6	1.18	5.9	6.3 H	142.2	1.32	5.5	4.6	8	LZ
E2A2KP	138.7	138.5	142.2	137.7	139.3	0.78	4.2	2.0	137.4	0.44	4.4	2.7	8	LD
E8ZCVM	136.0 L	136.6 L	136.6 L	136.4	136.4	0.27	1.9	0.3 L	137.6	0.48	2.3	1.4	8	LZ
EQPUJE	133.7	136.9	135.9	135.3	135.4	0.11	5.0	1.4	136.3	0.24	5.6	1.9	8	EX
FVK48L	140.9	139.8	NO DATA	NO DATA	140.3	0.96	6.1	0.7	142.4	1.35	6.2	3.0	6	MB
GPR2YF	136.2	135.5	135.5	134.6	135.4	0.11	4.4	0.6	134.6	-0.07	4.2	1.1	8	TH
HFXBWK	143.0	144.0	143.0	142.3	143.1	1.44	3.5	0.7	143.2	1.51	3.5	0.6 L	8	LD
HPM44B	134.2	133.2	137.7	137.6	135.7	0.15	4.4	2.3	135.5	0.08	4.5	2.8	8	LD
HUEBLJ	130.7	129.8	131.1	130.3	130.5	-0.75	3.5	0.6	130.3	-0.85	4.1	0.9	8	LD
J7QZZE	130.5	134.7	136.5	135.8	134.4	-0.07	3.1	2.7	134.2	-0.14	3.2	2.2	8	LD
JD492F	132.2	137.7	134.3	131.6	134.0	-0.15	4.3	2.7	136.2	0.23	3.8	3.1	8	LZ
KRKJ8H	137.5	141.3	140.9	138.5	139.5	0.82	4.7	1.8	140.5	1.02	4.8	2.0	8	TJ
LD3VTE	133.3	128.8	131.3	128.8	130.5	-0.74	2.9	2.2	130.4	-0.83	3.4	2.0	8	LD



**Containerboard Interlaboratory Testing Program**  
 Analysis 216  
**Ring Crush, 56 lb Linerboard - 56G1**  
 TAPPI Official Test Method T822

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
LU293E	139.9	142.2	140.1 H	140.5	140.7	1.02	5.6	1.1	138.7	0.67	6.4	2.7	8	LD
M2H4HA	136.4	134.1	141.8	141.5	138.4	0.63	4.3	3.8	140.5	1.01	4.0	3.9	8	LC
NL7PZC	133.0	135.4	133.5	135.3	134.3	-0.09	3.3	1.2	133.0	-0.37	3.4	1.8	8	LD
NY7QDD	No DATA	133.4	No DATA	137.9	135.7	0.15	3.2	3.2	137.3	0.42	3.7	2.7	4	LD
PF8Z6	131.6	134.1	136.3	133.4	133.9	-0.16	3.7	1.9	136.4	0.26	4.4	3.6	8	LD
PK82W7	132.3	134.8	131.8	132.2	132.8	-0.35	4.0	1.4	129.5	-1.01	4.0	4.3	7	LD
RBWE2B	136.0	136.2	136.1	137.2	136.4	0.28	3.0	0.6	136.7	0.31	2.9	0.6 L	8	LD
REVWY4	136.9 L	136.7 L	135.7 L	135.9 L	136.3	0.26	1.0	0.6	136.3	0.24	1.0	0.6 L	4	MB
TYVD2C	127.0	128.2	127.9	130.3	128.3	-1.13	3.4	1.4	128.6	-1.18	3.7	2.2	8	EM
U2FPC2	132.3	134.2	138.5	130.2 L	133.8	-0.17	2.9	3.5	133.2	-0.33	3.1	2.7	8	LC
ULNRA8	136.6	137.8	135.6	137.3	136.8	0.35	3.7	0.9	136.7	0.32	4.4	0.9	8	LZ
V82YY6	132.0	129.8	129.3	131.0	130.5	-0.74	3.5	1.2	131.9	-0.57	3.8	2.6	8	LD
VHKBGA	132.8	127.3	132.4	132.5	131.2	-0.62	4.3	2.6	131.2	-0.69	4.3	2.6	4	LD
VTK7BY	118.6*H	136.4	141.2 H	133.6 H	132.5	-0.41	10.2	9.7 H	131.7	-0.60	8.1	9.7 H	8	MB
XG32G8	131.8	134.6	134.1	135.3	133.9	-0.15	3.4	1.5	133.6	-0.26	3.4	1.4	8	LD
XLRHTX	126.0 L	127.9	126.4	126.7	126.7	-1.40	2.5	0.8	127.7	-1.34	2.9	2.4	8	TU
YDXTP3	133.8	132.5	136.2	136.7	134.8	0.00	3.5	2.0	135.0	0.01	3.8	1.5	8	EN
ZTJZVY	126.0	126.9	126.6	127.0	126.6	-1.42	4.3	0.4 L	126.6	-1.53	4.3	0.4 L	4	LD

Consensus (All Labs) Results									
Wk Mean	133.98	134.60	135.32	134.67	Month Mean	134.80	Grand Mean	134.99	
Avg SDr	5.03	4.71	4.09	4.45	Avg SD	4.69	Avg SD	4.64	
SD btwn Labs	6.32	6.15	6.14	6.13	SD btwn Labs	5.75	SD btwn Labs	5.46	
Labs Incl	49	50	47	49	SD btwn Wks	2.79	SD btwn Wks	3.28	
Labs Excl	2	2	3	1	Labs Incl	51	Labs Incl	51	
Labs not Rcvd	2	1	3	3					

**Key to Instrument Codes Reported by Participants**

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LY	L&W Crush Tester 958
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
RS	Regmed Digital Crush Tester CT-2000	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TU	TMI Universal Crush Tester (TMI K440)



Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F2

TAPPI Official Test Method T826

Report #606 (C)

March 2020

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
2CERGX	22.3	22.1	22.7	NO DATA	22.4	-1.21	1.6	0.3	22.8	-0.64	1.6	0.5	7	LU
33JAFU_AL	38.6 X	37.9 X	38.1 XH	36.4 X	37.8	17.66 X	2.2	0.9	37.8	17.13 X	2.2	0.9	4	AL
3GY8KU	22.5	25.5 *	24.2	23.6	24.0	0.75	1.6	1.3	23.8	0.54	1.7	1.0	8	LW
3ZG8UY	22.7	21.8	22.7	22.5	22.4	-1.15	1.6	0.4	22.0	-1.62	1.6	0.6	8	LH
47ZUZN	25.2 L	24.8 L	24.3	26.7 X	25.3	2.34 *	1.4	1.0	24.1	0.91	1.4	1.4	8	LA
6KX9XW	23.7 L	24.2	23.8 L	23.1 L	23.7	0.41	1.4	0.5	23.6	0.24	1.5	0.5	6	LY
6XM6YV_AL	39.3 XH	38.3 X	39.0 XH	39.6 X	39.0	19.21 X	2.4	0.6	38.3	17.80 X	2.4	0.9	8	AL
74NVKX	22.8	23.3	22.7	23.3 H	23.0	-0.40	1.6	0.3	23.1	-0.31	1.8	0.5	8	LA
7L3CNQ	25.6 *L	20.7 *L	23.4 L	25.6 *L	23.8	0.57	0.0	2.3 H	24.8	1.69	6.5	1.9 H	8	LA
8DNQEM	22.3	23.6 H	24.3	25.1 H	23.8	0.56	2.4	1.2	23.9	0.63	2.1	0.8	8	LZ
8DNQEM_AL	40.4 XH	41.1 XH	42.7 XH	24.5	37.2	16.94 X	3.0	8.5 H	38.7	18.29 X	4.3	5.9 H	8	AL
9FPBFR	22.6	21.1 L	21.2 *	21.2	21.5	-2.28 *	1.3	0.7	21.7	-1.99 *	1.5	0.6	8	LY
ACK3NM	25.8 *	23.0	22.2 L	20.6 *	22.9	-0.56	1.1	2.2 H	22.2	-1.42	1.3	1.6 H	8	LA
AHR9QK	24.9	25.1	25.7 *H	21.9	24.4	1.27	2.0	1.7	24.2	1.04	1.9	1.1	8	LU
BMH32Q	24.0	25.6 *	24.6	24.7	24.7	1.66	1.8	0.7	24.7	1.53	2.0	0.4	8	LU
BRCZQG	30.4 X	22.3	30.0 X	24.1 H	26.7	4.12 X	2.5	4.1 H	26.2	3.36 X	2.3	3.5 H	8	XX
C39MVJ_AL	22.1	20.5 *	23.8	23.8	22.6	-0.99	2.2	1.6	30.9	8.97 X	2.2	9.0 H	8	AL
CDQ8EF	24.4	24.1	23.8	23.9	24.0	0.84	1.7	0.2	24.0	0.81	1.5	0.5	8	LA
E3K48N	14.9 X	19.2 X	20.3 X	15.7 X	17.5	-7.18 X	1.8	2.6 H	19.3	-4.85 X	2.1	2.8 H	8	LH
EQPUJE	23.9 L	23.3 L	22.4 L	23.8 L	23.4	0.01	0.0	0.7	23.4	0.06	0.0	1.0	8	TT
FRH38P	22.8	23.3	22.4	21.5	22.5	-1.08	1.7	0.8	23.4	0.04	1.7	1.2	8	TT
FVK48L	25.8 *	23.4 L	NO DATA	NO DATA	24.6	1.50	1.2	1.7	24.6	1.45	1.2	1.7	2	LA
HFXBWK	23.9	23.7	23.4	23.7	23.7	0.41	1.9	0.2	23.6	0.28	1.8	0.2 L	8	LA
HPM44B	22.0	21.5	23.4	23.1	22.5	-1.03	1.7	0.9	22.9	-0.56	1.7	0.9	8	LY
HUEBLJ	23.8 H	24.0	22.6	22.7	23.3	-0.13	2.0	0.7	24.1	0.85	1.9	1.0	8	LU
J7QZZE	22.9	23.2 L	23.7	22.5	23.1	-0.36	1.3	0.5	23.4	0.06	1.3	0.6	8	BK
JD492F_AL	24.6	22.9	24.0	22.2	23.4	0.07	1.6	1.1	29.5	7.31 X	1.8	6.7 H	8	AL
KRKJ8H	23.2	23.8	23.9	23.6	23.6	0.30	1.3	0.3	23.6	0.27	1.2	0.3	8	TT
KTWY2J	23.2	23.4	22.9	24.0 L	23.4	0.04	1.1	0.5	20.8	-3.04 X	1.1	7.2 H	8	TT
L8PAK8	24.9	25.3	24.7	21.6	24.1	0.94	1.6	1.7	23.9	0.64	1.8	1.2	8	LU
LD3VTE_AL	22.6	22.2	21.9	22.0	22.1	-1.50	1.6	0.3	22.7	-0.83	1.7	0.7	8	AK
LU293E	23.6	23.1	23.6	24.4 H	23.7	0.39	2.0	0.5	23.8	0.55	1.8	1.2	8	LA
M2H4HA	24.3	23.5	23.5	24.7	24.0	0.75	2.2	0.6	24.2	0.97	2.2	0.5	8	LW
N4LY2C	23.6	23.8	23.5	22.4	23.3	-0.04	1.6	0.6	23.7	0.38	1.6	0.6	8	LY
NL7PZC	22.1	22.4	22.8 H	23.0	22.6	-0.97	1.9	0.4	22.4	-1.11	1.6	0.4	8	LA



Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F2

TAPPI Official Test Method T826

Report #606 (C)

March 2020

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
NY7QDD	24.5	24.4	24.1	24.9	24.5	1.38	1.9	0.3	24.3	1.07	1.8	0.4	8	LW
PFD8Z6	22.9	23.1	23.7	23.2	23.2	-0.19	1.9	0.3	23.3	-0.05	1.7	0.4	8	LA
PK82W7	21.7 L	22.5	21.6	21.9	22.0	-1.73	1.8	0.4	21.9	-1.74	1.8	0.5	8	LY
PLG7CF_AL	22.9	23.4	23.2	23.9 L	23.4	-0.01	1.8	0.4	23.4	-0.02	1.8	0.4	4	AK
PPGH9F	25.2	25.3	24.8	23.4	24.7	1.64	2.1	0.9	24.5	1.36	2.0	0.8	8	LH
QUN892	25.2 H	24.5	23.6 H	22.5	24.0	0.73	2.9	1.2	24.0	0.76	2.5	1.0	8	LZ
RBWE2B	22.9	23.4	23.5	23.2	23.3	-0.13	1.5	0.3	23.3	-0.14	1.5	0.3	4	LY
RY299D	23.0	22.8	21.7	23.4	22.7	-0.78	1.7	0.7	22.9	-0.51	1.7	0.7	8	LH
U2FPC2	23.3	23.5	23.4	23.3	23.3	-0.02	1.7	0.1 L	23.2	-0.16	1.7	0.2 L	8	LU
UJZFB2	23.2	22.6	22.2	22.5	22.6	-0.90	1.8	0.4	23.3	-0.12	1.8	0.9	8	XX
ULNRA8	23.3 H	23.2	23.5	22.7	23.2	-0.21	2.1	0.3	23.2	-0.24	1.9	0.4	8	LW
V82YY6_AL	38.8 X	40.2 XH	39.5 XH	41.7 XH	40.1	20.48 X	2.7	1.2	39.8	19.53 X	3.1	1.5	8	XX
VHKBGA	24.0	23.5	23.7	23.2	23.6	0.28	1.7	0.3	23.0	-0.39	1.8	0.6	8	XX
VTK7BY	23.1	23.5	23.3	23.5	23.3	-0.02	1.6	0.2	23.2	-0.25	1.7	0.4	8	LA
WDJMD8	24.7	24.7	24.6	24.9	24.7	1.68	1.7	0.1 L	25.0	1.91	1.7	0.4	8	LH
X4RV2Y_AL	22.8	21.9	22.0	21.5	22.0	-1.63	1.5	0.5	22.2	-1.37	1.5	0.5	8	AL
XG32G8	23.5	23.2	24.0	22.6	23.3	-0.07	1.5	0.6	22.9	-0.60	1.5	0.7	8	LZ
YDXTP3	20.2 X	21.2	20.5 X	20.7 *	20.6	-3.34 X	1.7	0.4	21.1	-2.68 *	2.0	0.6	8	LH
YLQ8AZ	22.1 L	22.0	22.4	22.7 L	22.3	-1.32	1.6	0.3	22.6	-0.90	1.6	0.4	8	LW
Z8ZVBV_AL	23.5	23.0	24.0	23.7	23.5	0.23	1.7	0.4	23.5	0.11	1.7	0.5	8	AL
ZTJZVY_AL	23.6	22.8	23.4 L	23.6	23.4	-0.01	1.6	0.4	22.9	-0.50	1.3	0.6	8	XX

Consensus (All Labs) Results														
Wk Mean	23.53	23.23	23.35	23.15	Month Mean	23.36			Grand Mean	23.36				
Avg SDr	1.81	1.74	1.71	1.79	Avg SD	1.74			Avg SD	1.95				
SD btwn Labs	1.07	1.19	0.93	1.14	SD btwn Labs	0.82			SD btwn Labs	0.84				
Labs Incd	49	51	48	49	SD btwn Wks	0.87			SD btwn Wks	0.82				
Labs Exclcd	7	5	7	5	Labs Incd	49			Labs Incd	47				
Labs not Rcvd	0	0	1	2										



Containerboard Interlaboratory Testing Program  
Analysis 223  
**STFI, 42 lb Linerboard - 42F2**  
TAPPI Official Test Method T826

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>AK</b>	L & W Autoline 300	<b>AL</b>	L & W Autoline 400
<b>BK</b>	Buchel Strip Compression Tester BK-155	<b>LA</b>	L&W Autoline (223 Enrollment)
<b>LH</b>	L&W 282	<b>LU</b>	L&W 52 without moisture correction(was 53)
<b>LW</b>	L&W 53 with moisture correction (was 53M)	<b>LY</b>	L&W 152 without moisture correction
<b>LZ</b>	L&W (model not specified)	<b>TT</b>	TMI Short Span Compression, 17-34 (MB K455)
<b>XX</b>	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program

Analysis 224

Report #606 (C)

March 2020

STFI, 56 lb Linerboard - 56G1

TAPPI Official Test Method T826

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
2CERGX	34.5	33.2	33.9	NO DATA	33.9	-0.62	2.0	0.6	34.0	-0.70	2.1	0.5	7	LU
33JAFU_AL	43.6 XH	42.7 XH	43.1 XH	43.2 XH	43.2	6.96 X	3.9	0.4	43.2	5.90 X	3.9	0.4	L 4	AL
3GY8KU	36.9	35.6	36.8	37.0	36.6	1.58	2.4	0.6	36.4	1.06	2.4	0.7	8	LW
3ZG8UY	32.8	32.1	32.8	32.2	32.5	-1.78	2.3	0.4	32.7	-1.62	2.6	0.6	8	LH
47ZUZN	40.0 X	36.8	38.0 *H	38.4 *	38.3	2.98 X	2.5	1.3	37.5	1.81	2.6	1.7	8	LA
6KX9XW	34.4	34.2	34.1 L	33.7 L	34.1	-0.43	2.3	0.3	34.4	-0.41	2.2	0.6	8	LY
6XM6YV_AL	40.8 X	40.6 XL	41.9 XH	41.4 X	41.2	5.33 X	2.7	0.6	41.3	4.60 X	2.7	1.4	8	AL
74NVKX	34.0	34.9	35.1 L	32.2 L	34.0	-0.49	1.6	1.3	34.1	-0.61	2.1	0.9	8	LA
7L3CNQ	38.0 *L	35.3 L	36.5 L	38.1 *L	37.0	1.91	0.0	1.3	37.1	1.58	14.3	2.2	8	LA
8DNQEM	36.2	34.5	34.8	35.0 H	35.1	0.37	2.7	0.7	35.9	0.67	3.3	1.2	8	LZ
8DNQEM_AL	43.4 XH	46.3 XH	46.5 XH	35.6	43.0	6.80 X	3.6	5.1 H	43.2	5.91 X	3.3	4.1 H	8	AL
9FPBFR	32.3	32.3	32.8	31.8	32.3	-1.94 *	2.3	0.4	32.7	-1.62	2.5	0.6	8	LY
ACK3NM	37.0 L	32.6	32.9	31.3 L	33.5	-0.97	1.5	2.5	33.5	-1.01	1.5	2.2	8	LA
AHR9QK	37.2	37.4	37.0	32.9	36.1	1.23	2.6	2.1	36.4	1.04	2.5	1.6	8	LU
BMH32Q	35.5	38.5 *H	36.6	36.4 L	36.7	1.70	2.8	1.3	35.8	0.59	3.5	1.5	8	LU
BRCZQG	40.1 X	34.3	41.8 X	33.2	37.3	2.21 *	2.0	4.3 H	36.7	1.24	1.6	3.3 H	8	XX
C39MVJ_AL	34.7	33.3 H	33.7	35.3	34.3	-0.32	2.9	0.9	38.0	2.17 *	2.8	4.1 H	8	XX
CDQ8EF	35.1	34.5	35.0	35.3	35.0	0.27	2.3	0.3	34.4	-0.36	2.3	0.9	8	LU
E3K48N	22.3 X	30.8 *	29.0 XH	21.7 X	25.9	-7.10 X	2.8	4.7 H	29.3	-4.04 X	2.6	4.7 H	8	LH
EQPUJE	33.6 L	35.8 L	35.4 L	38.2 *L	35.7	0.89	0.0	1.9	35.7	0.52	0.0	1.3	8	LZ
FRH38P	33.5	33.9	33.0	32.8	33.3	-1.10	2.3	0.5	37.3	1.71	2.3	4.3 H	8	TT
FVK48L	35.6	30.7 *L	NO DATA	NO DATA	33.1	-1.22	2.3	3.4	34.3	-0.43	2.1	1.8	6	LA
HFXBWK	34.5	35.1	34.9	34.5	34.8	0.11	2.9	0.3	34.7	-0.20	2.9	0.2 L	8	LA
HPM44B	34.5	33.0	33.4	34.4	33.9	-0.64	2.6	0.7	34.1	-0.60	2.5	0.7	8	LZ
HUEBLJ	34.7 H	35.5	33.7	32.4	34.1	-0.44	3.0	1.3	35.1	0.15	3.0	1.5	8	LU
J7QZZE	33.8	34.4	34.1 L	34.7 L	34.2	-0.33	1.6	0.4	34.2	-0.53	1.5	0.7	8	BK
JD492F_AL	34.9	36.4	33.6	33.9	34.7	0.05	2.2	1.3	37.9	2.13 *	2.4	3.8 H	8	AL
KRKJ8H	34.5 L	34.0	34.7	35.0 L	34.6	-0.06	1.4	0.4	34.6	-0.28	1.4	0.3 L	8	TT
KTWY2J	34.5 L	34.8 L	34.8 L	35.1 L	34.8	0.12	1.2	0.2	34.9	-0.04	1.3	0.2 L	8	TT
L8PAK8	36.8	36.5	36.6	32.6	35.6	0.79	2.5	2.0	35.5	0.37	2.3	1.5	8	LU
LD3VTE_AL	33.3	32.8 L	32.0	33.5	32.9	-1.43	1.8	0.7	33.6	-0.95	1.8	1.2	8	AK
LU293E	35.9	34.6	34.8	37.0	35.6	0.76	2.4	1.1	36.6	1.18	2.4	1.5	8	LA
M2H4HA	36.0	35.4	34.4	35.1	35.2	0.47	2.5	0.6	35.8	0.61	2.5	0.8	8	ID
N4LY2C	35.8	34.9	35.1	33.8	34.9	0.23	2.5	0.8	34.6	-0.25	2.4	0.7	8	LU
NL7PZC	33.6	33.4	34.6 L	32.7	33.6	-0.87	2.0	0.8	33.2	-1.22	2.4	0.8	8	LW



**Containerboard Interlaboratory Testing Program**  
 Analysis 224  
**STFI, 56 lb Linerboard - 56G1**  
 TAPPI Official Test Method T826

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
NY7QDD	37.4 *	35.5	35.0	35.6	35.9	1.02	2.3	1.0	35.8	0.58	2.5	0.9	8	LW
PFD8Z6	35.0	34.7	34.2	34.7	34.6	0.00	2.2	0.3	34.6	-0.22	2.3	0.2 L	8	LA
PK82W7	33.5	32.3	34.1	32.1	33.0	-1.33	2.3	0.9	32.6	-1.66	2.4	0.9	7	XX
PLG7CF_AL	34.0	35.0	34.8	34.8	34.7	0.02	2.0	0.5	34.7	-0.20	2.0	0.5	4	AK
PPGH9F	37.0	37.5	38.2 *	34.6	36.8	1.78	2.8	1.6	36.4	1.06	2.9	1.4	8	LH
QUN892	34.1	35.4	34.8	35.0	34.8	0.15	2.6	0.6	35.0	0.04	1.9	0.6	8	LZ
RBWE2B	34.8	34.6 L	34.7	34.9	34.8	0.12	2.1	0.1 L	34.8	-0.08	2.2	0.1 L	8	LY
RY299D	34.2	35.0	33.5 L	34.0	34.2	-0.38	2.3	0.6	34.2	-0.49	2.3	0.5	8	LH
U2FPC2	35.1	35.0	34.1	34.7	34.7	0.07	2.0	0.4	34.4	-0.37	2.3	0.5	8	LU
UJZFB2	33.2	33.6	33.2 L	33.3	33.3	-1.06	2.2	0.2	34.2	-0.50	2.4	1.2	8	XX
ULNRA8	33.9 H	36.0	34.2	33.1	34.3	-0.28	2.9	1.2	33.3	-1.18	2.6	1.5	8	LW
V82YY6_AL	42.1 X	41.3 X	42.6 X	42.2 XH	42.1	6.06 X	3.0	0.5	42.1	5.11 X	3.0	0.5	4	XX
VHKBGA	34.1	34.8	34.9	35.2	34.8	0.10	2.5	0.4	33.4	-1.09	2.4	1.5	8	XX
VTK7BY	34.4	36.0	33.1	34.9	34.6	-0.03	2.3	1.2	34.0	-0.70	2.1	1.1	8	LA
WDJMD8	37.1	36.6	37.7 *	38.2 *	37.4	2.25 *	2.2	0.7	37.4	1.77	2.3	0.5	8	LH
X4RV2Y_AL	33.5	33.2	33.2	32.8	33.1	-1.22	2.2	0.3	34.0	-0.70	2.2	1.0	8	AL
XG32G8	34.6	33.9	34.3	34.6	34.3	-0.26	2.7	0.3	34.1	-0.61	2.6	0.8	8	LZ
YDXTP3	30.5 X	30.0 *	29.8 X	32.0 H	30.6	-3.32 X	2.9	1.0	29.6	-3.83 X	2.4	3.5 H	8	LU
YLQ8AZ	33.3	33.5 H	33.9	33.1	33.4	-0.98	2.5	0.4	33.4	-1.13	2.3	0.7	8	LW
Z8ZVBV_AL	34.1	35.1	35.5	34.8	34.9	0.19	2.3	0.6	34.8	-0.11	2.3	0.8	8	AL
ZTJZVY_AL	33.8	34.6	33.8	35.1	34.3	-0.26	2.3	0.7	34.3	-0.45	2.3	0.7	4	XX

Consensus (All Labs) Results														
Wk Mean	34.81	34.50	34.63	34.42	Month Mean	34.64			Grand Mean	34.94				
Avg SDr	2.40	2.39	2.34	2.27	Avg SD	2.32			Avg SD	3.10				
SD btwn Labs	1.35	1.69	1.40	1.74	SD btwn Labs	1.22			SD btwn Labs	1.39				
Labs Incl	48	52	48	50	SD btwn Wks	1.24			SD btwn Wks	1.51				
Labs Excl	8	4	7	4	Labs Incl	49			Labs Incl	50				
Labs not Rcvd	0	0	1	2										





Containerboard Interlaboratory Testing Program  
Analysis 224  
**STFI, 56 lb Linerboard - 56G1**  
TAPPI Official Test Method T826

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>AK</b>	L & W Autoline 300	<b>AL</b>	L & W Autoline 400
<b>BK</b>	Buchel Strip Compression Tester BK-155	<b>ID</b>	IDM Compression Tester
<b>LA</b>	L&W Autoline (224 Enrollment)	<b>LH</b>	L&W 282
<b>LU</b>	L&W 52 without moisture correction (was 53)	<b>LW</b>	L&W 53 with moisture correction (was 53M)
<b>LY</b>	L&W 152 with moisture correction	<b>LZ</b>	L&W (model not specified)
<b>TT</b>	TMI Short Span Compression, 17-34 (MB K455)	<b>XX</b>	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 228  
**Roughness - Stylus Method, 42 lb Linerboard - 42F2**  
 TAPPI Official Test Method T575

**Report #606 (C)**  
**March 2020**

WebCode	Monthly Results				Cumulative Results				
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
33JAFU_AL	129.5	-0.92	6.88	L	129.5	-0.94	0.00	1	AL
3GY8KU	135.6	-0.44	6.80	L	144.5	-0.17	6.75	4	LS
6XM6YV_AL	150.7	0.76	29.57		174.2	1.34	24.22	3	AL
7L3CNQ	141.8	0.06	6.79	L	167.9	1.02	22.45	4	LA
8R97HL	141.5	0.03	16.09		134.8	-0.67	8.26	4	LS
9FPBFR	143.3	0.17	17.97		147.5	-0.02	4.35	4	EV
9J97HJ	173.3	2.55 *	66.61	H	170.7	1.16	3.75	2	EV
ACK3NM	19.9	-9.61 X	24.05		7.3	-7.16 X	10.95	3	EV
AHR9QK	182.2	3.26 X	54.51	H	195.7	2.43 *	15.45	4	EV
C39MVJ	134.1	-0.56	16.09		244.6	4.92 X	95.79	H 3	EV
FVK48L	136.0	-0.40	29.24		137.6	-0.52	5.04	4	LA
HFXBWK	151.7	0.84	12.47		150.3	0.12	3.59	4	LS
HPM44B	149.7	0.68	13.96		153.3	0.27	3.96	4	EV
HUEBLJ	142.8	0.13	16.78		148.4	0.03	6.69	4	EV
JD492F_AL	146.5	0.43	14.11		146.2	-0.09	5.59	3	XX
L8PAK8	167.7	2.11 *	44.14	H	176.6	1.46	9.40	3	EV
LD3VTE	120.1	-1.67	8.95	L	123.5	-1.24	4.47	4	LS
LU293E	129.0	-0.96	14.25		132.1	-0.80	4.81	4	LA
NL7PZC	147.6	0.51	15.06		142.6	-0.27	4.34	4	LA
NY7QDD	118.8	-1.77	11.52		120.1	-1.41	2.49	L 3	XX
PFD8Z6	136.8	-0.34	29.70		132.4	-0.79	9.23	4	LA
PLG7CF	145.7	0.36	19.53		184.6	1.87	26.13	4	LA
PLG7CF_AL	132.5	-0.68	16.04		132.5	-0.78	0.00	1	AK
PPGH9F	157.6	1.30	13.44		132.2	-0.80	25.34	4	EV
QUN892	139.4	-0.14	23.21		130.0	-0.91	12.84	4	XX
ULNRA8	142.0	0.07	14.94		140.5	-0.37	5.88	4	EV
VTK7BY	137.6	-0.28	17.91		136.3	-0.59	7.65	4	LA
X4RV2Y_AL	133.5	-0.60	9.47	L	141.0	-0.35	7.45	3	AL
Z8ZVBV_AL	125.1	-1.27	16.00		167.7	1.01	67.15	H 3	AL

Consensus (All Labs) Results			
Month Mean	141.12	Grand Mean	147.87
Avg SD	22.52	Avg SD Months	17.88
SD btwn Labs	12.62	SD btwn Labs	19.65
Labs Incl	27	Labs Incl	27



Containerboard Interlaboratory Testing Program  
Analysis 228  
**Roughness - Stylus Method, 42 lb Linerboard - 42F2**  
TAPPI Official Test Method T575

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>AK</b>	L & W Autoline 300	<b>AL</b>	L & W Autoline 400
<b>EV</b>	Emveco Microgage Model 210-R	<b>LA</b>	L&W Autoline (228 Enrollment)
<b>LS</b>	L&W 263	<b>XX</b>	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 229  
**Roughness - Sheffield Method, 42 lb Linerboard - 42F2**  
 TAPPI Official Test Method T538

**Report #606 (C)**  
**March 2020**

WebCode	Monthly Results				Cumulative Results					
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst	
47ZUZN	367.2	0.94	4.21		366.7	0.45	1.10	L	3	XX
6XM6YV_AL	22.9	-40.49 X	1.72	L	132.7	-2.30 *	155.27		2	AL
8DNQEM_AL	126.7	-28.00 X	19.78	H	126.7	-2.37 *	0.00		1	AL
C39MVJ_AL	357.4	-0.24	7.15		356.7	0.33	0.64	L	3	AL
CDBNUH	394.4	4.21 X	8.87		394.9	0.78	2.68	L	3	TS
CUFAYQ	363.9	0.54	6.71		363.9	0.41	0.00		1	TS
CXFLVQ	350.5	-1.07	6.20		349.3	0.24	2.40	L	3	XX
PK82W7	352.9	-0.78	8.06		352.4	0.28	1.78	L	3	PP
PLG7CF_AL	343.9	-1.87 *	6.19		343.9	0.18	0.00		1	AK
U2FPC2	363.1	0.44	8.05		362.0	0.39	2.41	L	3	XX
V82YY6_AL	362.9	0.42	10.89		359.7	0.36	4.60		2	XX
VHKBGA	1,237.6	105.66 X	76.09	H	1,237.6	10.68 X	0.00		1	XX
XG32G8	371.5	1.45	4.37		371.8	0.51	6.58	L	3	XX
Z8ZVBV_AL	354.2	-0.63	8.79		358.0	0.35	6.90	L	3	AL
ZTJZVY_AL	366.1	0.80	10.63		362.2	0.39	5.52		2	AL

Consensus (All Labs) Results			
Month Mean	359.42	Grand Mean	328.62
Avg SD	7.68	Avg SD Months	46.98
SD btwn Labs	8.31	SD btwn Labs	85.11
Labs Incd	11	Labs Incd	14

**Key to Instrument Codes Reported by Participants**

- |   |  |
|---|--|
| <b>AK</b> L & W Autoline 300<br><b>PP</b> Technidyne Profile/Plus<br><b>XX</b> Instrument make/model not specified by lab | <b>AL</b> L & W Autoline 400<br><b>TS</b> TMI Monitor/Smoothness |
|---|--|



**Containerboard Interlaboratory Testing Program**  
 Analysis 231  
**Internal Bond, 42 lb Linerboard - 42F**  
 TAPPI Official Test Method T569

**Report #606 (C)**  
**March 2020**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
33JAFU	109.0	1.49	4.18	110.5	1.50	6.45	4	SC
47ZUZN	93.0	-0.22	2.45	93.0	-0.42	0.25	L 3	SC
6XM6YV	95.2	0.01	9.20	H 104.6	0.85	11.39	4	SC
7VTXUN	102.5	0.79	2.64	104.4	0.84	2.01	4	TM
8R97HL	94.8	-0.03	2.86	97.5	0.07	3.13	4	HY
ACK3NM	87.6	-0.80	4.04	90.9	-0.66	4.19	4	TM
AHR9QK	80.4	-1.57	4.16	83.0	-1.53	3.36	4	TM
C39MVJ	86.6	-0.91	6.35	84.9	-1.31	2.71	4	TM
CDQ8EF	102.2	0.76	2.77	100.1	0.36	2.35	4	HZ
E3K48N	93.6	-0.16	2.07	98.3	0.16	4.13	3	XX
HPM44B	85.2	-1.06	6.21	89.9	-0.76	3.78	4	XX
HUEBLJ	79.8	-1.64	3.96	80.8	-1.76	1.47	4	TM
JD492F	92.8	-0.24	2.95	92.9	-0.43	3.22	4	TM
L8PAK8	58.0	-3.97	X 15.46	H 66.4	-3.35	X 6.01	4	TM
LD3VTE	96.5	0.16	3.90	101.7	0.54	3.88	4	TM
NL7PZC	104.0	0.96	5.52	114.0	1.88	8.68	4	HY
PFD8Z6	88.8	-0.67	3.63	87.2	-1.07	5.62	4	TM
PK82W7	103.0	0.85	2.45	104.1	0.80	1.63	3	HY
PLG7CF	100.0	0.53	7.91	100.0	0.35	0.00	1	SC
PPGH9F	188.0	9.95	X 34.02	H 188.0	10.03	X 0.00	1	XX
U2FPC2	105.7	1.14	6.58	106.6	1.08	1.14	4	HY
V82YY6	83.4	-1.25	0.88	L 89.6	-0.79	7.25	4	SC
XLRHTX	112.4	1.86	1.58	99.7	0.31	14.37	H 3	TM
ZTJZVY	43.0	-5.58	X 0.33	L 42.9	-5.93	X 1.50	3	LZ

Consensus (All Labs) Results			
Month Mean	95.07	Grand Mean	96.84
Avg SD	4.61	Avg SD Months	5.73
SD btwn Labs	9.34	SD btwn Labs	9.09
Labs Incl	21	Labs Incl	21

**Consensus By Method**

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	94.40	9.35	0.67	18
Modified Scott Bond Mechanics	104.86	1.22	9.79	2

**Analysis Notes**

ZTJZVY - Method used is not covered in this test. Data excluded from consensus calculation.



Containerboard Interlaboratory Testing Program  
Analysis 231  
**Internal Bond, 42 lb Linerboard - 42F**  
TAPPI Official Test Method T569

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>HY</b>	Huygen Digitized Scott Internal Bond Tester	<b>HZ</b>	Huygen Internal Bond Tester with AccuPress
<b>LZ</b>	L&W (model not specified)	<b>SC</b>	Scott Internal Bond Tester (Manual)
<b>TM</b>	TMI Monitor/Internal Bond Tester	<b>XX</b>	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 234  
**COF Inclined Plane (Slide Angle), 42 Ib Linerboard - 42F**  
 TAPPI Official Test Method T815

**Report #606 (C)**  
**March 2020**

WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SD	Mean	CPV	SD Months	Months
33JAFU	20.4	-2.38 *	1.14	20.3	-2.64 *	0.26 L	4
3GY8KU	26.0	-0.43	2.55	28.0	0.45	1.59	4
3PWZTN	29.0	0.61	3.32	27.9	0.44	1.45	4
3ZG8UY	29.2	0.68	2.33	31.2	1.75	1.42	4
47ZUZN	28.6	0.47	1.52	28.7	0.76	0.23 L	3
6XM6YV	30.2	1.03	0.84	30.4	1.43	1.23	4
9FPBFR	28.2	0.33	2.94	27.0	0.07	2.64	4
9PFWLP	23.6	-1.27	2.07	24.3	-1.05	0.60	4
AHR9QK	28.0	0.26	2.65	27.5	0.27	1.14	4
AQ8APU	30.4	1.10	1.52	29.0	0.86	2.15	3
BWMD8F	26.6	-0.23	1.56	25.0	-0.74	2.17	4
C39MVJ	28.2	0.32	2.54	27.6	0.29	1.28	4
CCYBQL	23.8	-1.20	1.48	24.3	-1.05	1.33	4
FVK48L	24.9	-0.82	1.43	22.3	-1.85	3.75	2
HFXBWK	25.4	-0.64	1.52	25.9	-0.40	0.41	4
HPM44B	28.3	0.37	4.58	25.2	-0.66	4.01	4
HUEBLJ	27.7	0.16	1.68	29.0	0.88	1.16	3
J2ARCE	22.8	-1.55	1.79	24.4	-0.98	1.60	3
JD492F	27.0	-0.09	1.58	27.5	0.24	1.79	4
L8PAK8	28.4	0.40	1.67	27.4	0.23	3.28	4
LD3VTE	25.2	-0.71	7.19 H	24.9	-0.79	1.57	4
NL7PZC	27.2	-0.02	2.39	27.8	0.39	3.00	4
NY7QDD	31.0	1.30	3.54	30.4	1.41	1.72	4
PFD8Z6	25.6	-0.57	2.30	26.1	-0.32	2.58	4
PK82W7	24.3	-1.03	2.17	26.3	-0.22	2.05	3
PLG7CF	29.4	0.75	2.70	30.2	1.33	0.98	4
PPGH9F	29.6	0.82	2.97	28.5	0.65	1.39	4
QUN892	25.6	-0.57	1.50	24.5	-0.94	0.77	4
U2FPC2	25.7	-0.53	3.21	25.8	-0.43	2.02	4
ULNRA8	28.2	0.33	1.92	25.4	-0.58	2.59	4
X4RV2Y	23.0	-1.48	1.00	23.8	-1.23	0.94	4
XG32G8	32.4	1.79	3.65	27.5	0.28	7.73 H	4
Z8ZVBV	28.6	0.48	3.62	29.4	1.04	1.10	4
ZTJZVY	34.0	2.35 *	1.41	29.6	1.11	3.82	3



Containerboard Interlaboratory Testing Program  
Analysis 234  
**COF Inclined Plane (Slide Angle), 42 lb Linerboard - 42F**  
TAPPI Official Test Method T815

**Report #606 (C)**  
**March 2020**

Consensus (All Labs) Results			
Month Mean	27.25	Grand Mean	26.84
Avg SD	2.65	Avg SD Months	2.39
SD btwn Labs	2.88	SD btwn Labs	2.48
Labs Incl	34	Labs Incl	34

**Key to Instrument Codes Reported by Participants**

ZZ Instruments No Longer Tracked





Containerboard Interlaboratory Testing Program  
Analysis 237

Report #606 (C)  
March 2020

Air Resistance, 42 lb Linerboard - 42F2

TAPPI Official Test Method T460

WebCode	Monthly Results				Cumulative Results				Inst	
	Mean	CPV	SD		Mean	CPV	SD	Months		
33JAFU_AL	21.5	-0.46	1.51		21.5	-0.38	0.00	1	AL	
6MZ79P	23.8	0.80	4.08	H	23.9	1.69	1.06	4	GG	
6XM6YV_AL	22.9	0.32	1.72		21.8	-0.12	1.04	3	AL	
7L3CNQ	25.9	1.93 *	2.11		21.1	-0.76	10.27	H	4	LA
8DNQEM_AL	22.6	0.14	2.27		22.1	0.15	0.50	3	AL	
8R97HL	21.8	-0.32	0.83	L	22.4	0.36	0.45	4	LP	
AHR9QK_AL	22.3	-0.04	2.01		22.5	0.46	0.28	2	XX	
AQ8APU	20.7	-0.92	1.72		21.6	-0.33	0.80	3	LP	
BWMD8F_AL	22.0	-0.19	0.98		21.7	-0.23	0.47	2	XX	
C39MVJ_AL	21.5	-0.45	1.93		21.9	-0.05	0.31	L	3	AL
CNCBLF	21.8	-0.30	1.62		21.7	-0.25	0.17	L	4	XX
E3K48N	20.8	-0.87	1.93		21.5	-0.40	0.62	3	XX	
FVK48L	20.7	-0.88	2.10		20.8	-0.99	0.58	4	LA	
HFXBWK	21.4	-0.49	1.76		21.4	-0.45	0.90	4	LA	
HPM44B	22.8	0.23	1.54		22.4	0.43	0.92	4	LP	
HUEBLJ	26.5	2.28 *	2.37		25.7	3.23 X	1.71	3	GA	
JD492F_AL	23.7	0.77	1.86		23.1	1.05	0.54	3	XX	
JMEBMG	20.9	-0.81	2.01		20.8	-1.02	0.34	L	4	LP
L8PAK8_AL	22.9	0.31	2.40		23.0	0.93	0.14	2	XX	
LU293E	22.8	0.24	1.52		22.5	0.45	0.45	4	LA	
MFYYX7	23.8	0.78	1.31		23.1	1.04	0.74	4	LP	
NL7PZC	21.9	-0.24	1.79		22.1	0.10	0.95	4	LP	
NY7QDD	22.5	0.09	2.12		22.1	0.12	1.01	4	LP	
PFD8Z6	23.6	0.70	1.20		24.2	2.01 *	0.63	4	LA	
PK82W7	22.3	-0.04	3.34		22.7	0.67	0.84	3	TP	
PLG7CF_AL	19.6	-1.49	2.04		19.6	-2.01 *	0.00	1	AK	
PPGH9F	22.2	-0.10	1.53		22.6	0.55	0.45	4	LP	
QUN892	25.0	1.47	2.90		22.3	0.30	2.10	4	TD	
RBWE2B	23.7	0.74	0.82	L	23.2	1.10	0.50	3	LP	
TCJKV8	19.3	-1.64	2.58		18.9	-2.66 *	0.82	4	GA	
U2FPC2	24.7	1.28	3.67	H	22.6	0.56	1.62	4	TP	
ULNRA8	18.1	-2.33 *	2.48		19.8	-1.88	1.70	4	XX	
V82YY6_AL	22.3	-0.04	1.10		21.7	-0.24	0.85	2	XX	
VHKBGA	20.7	-0.88	1.85		20.7	-1.04	0.00	1	XX	
X4RV2Y_AL	21.9	-0.23	1.64		21.4	-0.43	0.49	3	AL	
XG32G8	24.1	0.97	3.97	H	23.4	1.28	0.65	4	GA	
Z8ZVBV_AL	19.2	-1.75	3.41		148.6	110.12 X	224.14	H	3	AL
ZTJZVY_AL	24.9	1.40	1.30		15.4	-5.64 X	13.38	2	AL	



Containerboard Interlaboratory Testing Program  
Analysis 237

Report #606 (C)  
March 2020

**Air Resistance, 42 lb Linerboard - 42F2**

TAPPI Official Test Method T460

**Consensus (All Labs) Results**

Month Mean	22.34	Grand Mean	21.94
Avg SD	2.19	Avg SD Months	2.00
SD btwn Labs	1.83	SD btwn Labs	1.15
Labs Incl	38	Labs Incl	35

**Key to Instrument Codes Reported by Participants**

<b>AK</b>	L & W Autoline 300	<b>AL</b>	L & W Autoline 400
<b>GA</b>	Gurley Precision #4340 Automatic Densometer	<b>GG</b>	Gurley Precision #4320 Densometer
<b>LA</b>	L&W Autoline (237 Enrollment)	<b>LP</b>	L&W Air Permeance Tester SE 166
<b>TD</b>	TMI Gurley Densometer	<b>TP</b>	Technidyne Profile/ plus Roughness & Porosity
<b>XX</b>	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program  
Analysis 240

Report #606 (C)  
March 2020

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T809

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2CERGX	57.4	61.5	57.5	No DATA	58.8	0.49	2.7	2.3	58.7	0.54	3.4	1.4	15	LZ
3ZG8UY	54.9	56.4 L	56.5	55.0	55.7	-0.72	2.9	0.9	56.2	-0.64	3.4	1.6	16	LD
6KX9XW	52.0 *	55.2	52.9	53.3	53.3	-1.64	2.8	1.4	53.9	-1.75	3.0	1.8	8	LD
7B2PWT	58.1	58.0	57.5	57.7	57.8	0.11	2.9	0.3	58.0	0.22	3.0	1.2	16	LD
7L3CNQ	57.6 H	56.2 H	53.6	53.2 H	55.1	-0.93	5.6	2.1	56.5	-0.53	5.2	2.6	16	TU
7VDEAQ	61.7	61.0	58.3	No DATA	60.3	1.09	4.3	1.8	59.8	1.08	4.1	2.5	15	LD
8R97HL	No DATA	No DATA	No DATA	58.6	58.6	0.42	3.2	0.0	56.0	-0.76	3.5	2.0	4	LD
96T8DJ	62.6	61.7	65.9 *	63.2 *H	63.4	2.28 *	5.2	1.8	65.6	3.86 X	4.5	2.3	16	LC
9FPBFR	52.1 *	53.4	55.2	55.2	54.0	-1.38	2.4	1.5	56.7	-0.41	3.0	2.8	16	EN
ACK3NM	57.7	59.1	55.7	56.0	57.1	-0.16	3.4	1.6	57.7	0.07	3.5	2.5	16	LC
AHR9QK	59.8	57.3	57.3	56.1	57.6	0.04	4.2	1.6	58.4	0.42	4.2	1.8	16	LC
CCYBQL	54.8	53.0	51.6	52.7	53.0	-1.77	3.9	1.3	55.1	-1.18	4.0	1.6	16	LZ
CDQ8EF	54.8	52.1	57.9	56.7	55.4	-0.84	3.0	2.5	55.3	-1.09	2.9	1.5	16	LD
E2A2KP	58.7	54.5	53.2	53.9	55.1	-0.96	4.1	2.5	55.7	-0.88	3.5	2.6	16	LD
EKPBLP	60.5	60.3	60.4	60.2	60.3	1.09	1.7	0.1 L	60.4	1.34	2.3	0.3 L	16	LD
EQUUJE	58.6	57.4	55.5	56.5	57.0	-0.21	3.6	1.4	57.2	-0.18	3.7	1.7	16	EM
ETEWRN	56.6	55.3	58.1	57.0	56.7	-0.31	3.4	1.2	56.5	-0.53	3.2	1.4	16	TH
FVK48L	54.7	55.5	No DATA	No DATA	55.1	-0.94	3.8	0.6	54.8	-1.31	4.2	2.3	8	MB
HFXBWK	56.9	58.3	58.3	57.0	57.6	0.04	3.2	0.8	58.0	0.19	2.3	0.6	16	LD
HPM44B	57.2	56.2	56.0	60.2	57.4	-0.06	3.3	1.9	58.2	0.31	3.8	1.6	16	LZ
HUEBLJ	54.2	54.4	53.8	54.2	54.2	-1.32	3.3	0.3	55.2	-1.13	3.3	1.4	16	LD
J42N29	67.7 X	67.2 X	65.2 *	63.0 *H	65.8	3.22 X	5.4	2.1	66.9	4.46 X	4.7	2.6	16	EM
JMEBMG	60.8 L	60.6	59.9	59.4	60.2	1.03	3.8	0.6	60.3	1.32	4.2	1.9	16	LD
KRKJ8H	58.9	58.3	59.3	60.1	59.1	0.63	4.2	0.7	59.1	0.71	3.6	1.0	16	TJ
KTWY2J	57.1	57.6 H	58.1	57.8	57.6	0.04	5.1	0.4	58.1	0.24	4.5	1.1	16	TG
LCLY2E	57.4	58.3	58.9	57.8	58.1	0.22	3.6	0.6	57.8	0.12	3.5	0.5 L	16	LD
M2H4HA	54.2	56.2	56.0	58.0	56.1	-0.56	3.0	1.5	58.2	0.29	3.5	1.6	16	LD
MFYYX7	58.9	54.8	56.5	58.3	57.1	-0.15	2.7	1.9	57.5	-0.05	3.4	1.5	16	LD
N4LY2C	57.4	55.9	56.5	58.3	57.0	-0.20	4.0	1.0	58.0	0.22	4.6	1.5	16	LD
NL7PZC	58.2	59.2	58.2	57.7	58.3	0.31	3.2	0.6	58.1	0.25	3.4	1.1	16	LD
NY7QDD	60.4	61.1	59.0	59.9	60.1	1.01	4.5	0.9	60.1	1.23	3.8	1.0	16	LD
P9QGDA	57.6 L	57.3 L	57.6 L	57.7 L	57.6	0.01	1.3	0.2 L	57.9	0.15	1.5	0.3 L	16	LD
PFD8Z6	65.3 *	61.6	59.1	59.9	61.5	1.54	5.3	2.7	59.5	0.92	4.2	2.7	16	LD
PK82W7	60.8	57.9	57.5	56.3	58.1	0.22	3.9	1.9	56.4	-0.55	3.7	2.5	11	LD
PLG7CF	53.1	53.5	50.3 *	53.1	52.5	-1.96 *	3.4	1.5	53.3	-2.04 *	4.2	2.4	16	LD



Containerboard Interlaboratory Testing Program  
Analysis 240

Report #606 (C)  
March 2020

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T809

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
REVVY4	60.7 L	59.7	61.3	60.0 L	60.4	1.13	1.4	0.7	60.8	1.52	1.9	0.9	8	MB
RKJKU9	58.4	59.5	57.8	58.7	58.6	0.42	3.0	0.7	57.9	0.18	3.0	0.7	16	LC
RY299D	59.5	59.3	58.9	59.1	59.2	0.65	3.0	0.3	58.4	0.41	3.5	1.3	12	EM
TCJKV8	60.2	63.7 *H	59.6	59.3	60.7	1.23	3.9	2.0	58.9	0.64	4.3	3.2	15	LD
TMFNY2	58.1 L	58.8	58.7	58.8	58.6	0.42	2.0	0.3	56.3	-0.59	2.3	4.8 H	16	LC
U2FPC2	59.0	56.8 H	56.9	55.0	56.9	-0.23	5.1	1.6	58.4	0.42	4.1	2.1	16	LC
UJZFB2	62.0 L	62.6 L	60.1 L	63.8 *L	62.1	1.79	0.5	1.5	62.9	2.54 * 1.1	4.7 H	16	XX	
VHKBGA	56.5	54.5	55.4	54.4	55.2	-0.91	3.3	1.0	58.2	0.31	3.5	2.2	16	LD
VTK7BY	57.0	56.2	52.3	55.8	55.4	-0.85	3.6	2.1	55.4	-1.03	3.8	2.2	15	MB
VZYRJ3	57.4	58.1	59.7	59.5	58.7	0.45	3.6	1.1	59.2	0.78	4.1	1.2	12	LD
WDJMD8	52.5	51.7 *	51.2 *	53.3	52.2	-2.08 *	2.7	0.9	52.7	-2.31 * 3.4	1.4	16	LD	
X4RV2Y	61.8 H	62.1	60.4	57.4	60.4	1.12	4.7	2.1	59.4	0.89	3.9	2.6	16	LZ
XG32G8	56.8	58.4 L	59.3	58.8	58.3	0.31	2.4	1.1	58.1	0.25	3.4	1.9	16	LZ
XLRHTX	61.4 L	60.9	61.5	62.1	61.5	1.53	2.3	0.5	61.3	1.77	3.6	1.0	16	TU
YDXTP3	55.2	55.9	58.0	58.9	57.0	-0.20	3.5	1.7	55.5	-0.99	3.2	2.2	16	EN
ZTJZVY	53.5	55.1	53.1	55.4	54.3	-1.27	3.2	1.2	54.7	-1.37	3.4	1.3	12	LD

Consensus (All Labs) Results									
Wk Mean	57.77	57.60	57.37	57.58	Month Mean	57.53	Grand Mean	57.57	
Avg SDr	3.65	3.48	3.51	3.62	Avg SD	3.54	Avg SD	3.55	
SD btwn Labs	2.93	2.87	3.18	2.72	SD btwn Labs	2.57	SD btwn Labs	2.10	
Labs Incl	49	49	49	48	SD btwn Wks	1.42	SD btwn Wks	2.02	
Labs Excl	1	1	0	0	Labs Incl	50	Labs Incl	49	
Labs not Rcvd	1	1	2	3					

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200 Series
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TG	TMI Compression Tester, Model 17-10	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program  
Analysis 250

Report #606 (C)  
March 2020

Fluted Edge Crush Strength (FCF), 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T843

WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2CERGX	66.0	67.4	66.8	NO DATA	66.8	-0.37	3.5	0.7	69.0	0.37	3.4	2.0	15	LZ
8R97HL	NO DATA	NO DATA	NO DATA	62.1 *	62.1	-1.94 *	2.2	0.0	61.2	-2.47 *	3.0	0.8	3	LD
9FPBFR	65.6	63.0	62.4	63.1	63.5	-1.45	2.6	1.4	63.8	-1.53	2.8	2.1	12	XX
AHR9QK	60.7 *H	60.4 *H	60.3 *H	72.1	63.4	-1.51	7.2	5.8 H	67.3	-0.27	6.0	5.4 H	16	XX
CNCBLF	66.8 L	66.7 L	68.0	68.7 L	67.6	-0.10	1.8	1.0	67.6	-0.15	1.9	1.0	16	LZ
HFXBWK	67.8	67.6	69.4	68.2	68.3	0.13	3.6	0.8	68.7	0.23	2.4	0.5 L	16	LD
J7QZZE	65.4	66.0	66.8	63.5	65.4	-0.82	3.3	1.4	66.4	-0.58	4.0	1.4	16	LD
JMEBMG	73.1	72.6	72.2	70.5	72.1	1.42	3.7	1.2	71.4	1.23	3.6	1.6	16	LD
M2H4HA	65.5	68.2	66.3	70.4	67.6	-0.08	3.5	2.2	67.4	-0.24	3.1	1.5	16	LD
MFYYX7	68.8	62.3	67.0	65.2	65.8	-0.69	3.0	2.8	67.2	-0.30	3.2	2.0	16	LD
NL7PZC	75.7 *	75.3 *	74.7 *	70.4	74.0	2.07 *	4.1	2.4	73.1	1.83	4.2	2.0	16	LD
NY7QDD	73.5	72.3	71.1	71.1	72.0	1.39	4.2	1.2	71.4	1.23	4.0	1.3	16	LD
P9QGDA	68.0	68.3	68.1	68.2	68.2	0.10	2.0	0.1 L	68.5	0.16	1.8	0.3 L	16	LD
PFD8Z6	66.8	66.6	67.4	67.8	67.1	-0.24	3.6	0.5	67.5	-0.20	4.0	1.2	16	LD
PK82W7	69.5	68.7	69.8	71.3 H	69.8	0.67	4.2	1.1	69.6	0.57	4.2	1.7	11	LD
PLG7CF	70.6	70.1	73.0	70.9	71.1	1.11	3.3	1.3	71.1	1.13	3.3	1.3	4	LD
REVWY4	65.5	65.2 L	65.1 L	65.5 L	65.3	-0.86	1.4	0.2 L	65.2	-1.02	1.3	0.4 L	8	MB
RKJKU9	68.3	67.1	67.7	68.9	68.0	0.05	4.1	0.8	68.1	0.01	3.9	0.6 L	16	LD
U2FPC2	69.9	71.1	68.1	69.0	69.5	0.57	2.4	1.3	69.7	0.62	3.1	2.0	16	LC
UJZFB2	67.3 L	66.3 L	67.7 L	66.2 L	66.9	-0.34	1.1	0.7	69.1	0.38	1.1	2.0	16	XX
X4RV2Y	67.8	70.2	68.6	69.7	69.1	0.41	3.1	1.1	69.2	0.42	3.2	1.3	16	LZ
ZTJZVY	66.5	69.0	70.2	71.2	69.2	0.46	3.4	2.1	64.1	-1.41	3.5	6.8 H	12	LD

Consensus (All Labs) Results														
Wk Mean	68.06	67.83	68.12	68.28	Month Mean	67.85			Grand Mean	68.02				
Avg SDr	3.50	3.56	3.63	3.33	Avg SD	3.47			Avg SD	3.40				
SD btwn Labs	3.30	3.52	3.27	2.96	SD btwn Labs	2.97			SD btwn Labs	2.75				
Labs Incl	21	21	21	21	SD btwn Wks	1.86			SD btwn Wks	2.33				
Labs Excl	0	0	0	0	Labs Incl	22			Labs Incl	22				
Labs not Rcvd	1	1	1	1										

Key to Instrument Codes Reported by Participants

- LC L&W Crush Tester 48
- LZ L&W Crush Tester (model not specified)
- XX Instrument make/model not specified by lab
- LD L&W Crush Tester 248
- MB Messmer Buchel K440



**Containerboard Interlaboratory Testing Program**  
 Analysis 255  
**Ring Crush (RCT), 26 lb Corrugating Medium - CM11**  
 TAPPI Official Test Method T822

**Report #606 (C)**  
**March 2020**

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
74NVKX	45.3	45.6	44.8	44.4	45.0	0.70	3.7	0.5	46.3	1.51	3.7	1.6	16	LZ
7B2PWT	43.3	43.4	43.2	43.0 L	43.2	0.18	1.9	0.2 L	42.6	-0.54	2.0	0.8	16	LC
7VDEAQ	46.6	46.8	44.1	NO DATA	45.8	0.94	4.3	1.5	45.3	0.96	4.2	1.6	15	LZ
96T8DJ	36.4 *	35.2	35.8 *	34.7 *	35.5	-2.09 *	2.9	0.8	32.6	-6.13 X	3.1	3.2	16	XX
972FHW	41.5 L	40.5	43.1	43.0	42.0	-0.18	2.8	1.2	41.4	-1.23	3.3	2.5	16	LZ
A99XGT	43.2	44.5 L	44.3	44.0	44.0	0.41	2.4	0.6	43.7	0.07	4.8	2.1	12	LZ
CDQ8EF	46.1	41.8	46.3	45.7	45.0	0.69	3.3	2.1	45.2	0.90	3.5	1.9	16	LD
E2A2KP	49.0	44.6	45.3	42.5	45.3	0.80	3.2	2.7	44.7	0.62	3.3	2.0	16	LD
EKPBLP	44.5	44.3	44.4	44.2 L	44.4	0.51	2.0	0.1 L	44.4	0.48	2.1	0.2 L	16	LD
EQPUJE	42.6	42.6	39.4	38.4	40.7	-0.56	3.6	2.2	40.7	-1.64	3.5	1.4	16	EM
ETEWRN	31.6 XL	33.8 *	36.0 *	35.5	34.3	-2.46 *	2.1	2.0	35.3	-4.64 X	2.7	1.9	16	TH
FVK48L	47.5	45.2	NO DATA	NO DATA	46.4	1.10	2.4	1.6	46.5	1.60	4.5	1.0	7	MB
GPR2YF	46.0	44.9	42.5	43.7	44.3	0.48	2.7	1.5	45.1	0.86	3.0	1.8	16	TH
HFXBWK	44.7	43.6	43.1	42.8	43.6	0.27	2.6	0.8	43.6	0.03	2.9	0.6 L	16	LD
J42N29	41.2	43.2	41.7	40.3	41.6	-0.31	3.1	1.2	42.5	-0.63	3.6	1.9	16	EM
JMEBMG	45.8	46.8	45.0 H	47.3	46.2	1.06	4.2	1.0	44.5	0.50	3.6	2.0	16	LD
MFYYX7	41.9	40.7	42.8	42.5	42.0	-0.19	3.5	0.9	41.6	-1.10	3.3	1.2	16	LD
NL7PZC	44.3	46.3	46.3	45.7	45.7	0.89	3.8	1.0	44.9	0.72	3.2	1.3	12	XX
PK82W7	43.7	44.7	44.5	46.0	44.7	0.62	3.1	1.0	42.4	-0.67	3.3	2.1	11	LD
QCTFN3	34.1 *H	34.7 *H	34.9 *H	33.3 *	34.3	-2.46 *	6.9	0.7	37.2	-3.56 X	6.1	3.2	16	TX
REVWY4	40.3 L	41.8 L	39.9 L	39.0 L	40.3	-0.69	1.3	1.2	39.8	-2.09 *	1.3	1.0	8	MB
TCJKV8	38.3 H	37.0 H	46.5	45.1	41.7	-0.27	4.7	4.8 H	45.0	0.80	3.9	3.7	16	LD
TMFNY2	47.8	48.6	48.3	40.6 H	46.3	1.08	7.7	3.8 H	51.1	4.18 X	5.1	5.9 H	16	LC
U2FPC2	42.8	42.3	41.6	42.8	42.3	-0.08	4.0	0.6	42.9	-0.38	3.5	1.1	16	LC
VZYRJ3	45.1	46.1	44.3	44.9	45.1	0.73	3.7	0.7	45.4	1.02	3.1	1.3	16	LD
XG32G8	42.7	44.8	43.7 L	42.4	43.4	0.23	2.2	1.1	43.1	-0.27	3.0	1.2	16	LD
XLRHTX	40.1	40.7	40.8 L	41.2 L	40.7	-0.56	1.7	0.4	42.8	-0.41	1.8	7.1 H	16	TU
ZTJZVY	39.4	37.3	40.0	42.8	39.9	-0.81	3.1	2.3	41.6	-1.13	3.2	2.1	12	LD

Consensus (All Labs) Results														
Wk Mean	43.11	42.56	42.69	42.15	Month Mean	42.63			Grand Mean	43.59				
Avg SDr	3.14	3.40	3.57	4.31	Avg SD	3.60			Avg SD	3.33				
SD btwn Labs	3.49	3.88	3.32	3.52	SD btwn Labs	3.40			SD btwn Labs	1.79				
Labs Incl	27	28	27	26	SD btwn Wks	1.73			SD btwn Wks	2.23				
Labs Excl	1	0	0	0	Labs Incl	28			Labs Incl	24				
Labs not Rcvd	0	0	1	2										



Containerboard Interlaboratory Testing Program  
Analysis 255  
**Ring Crush (RCT), 26 lb Corrugating Medium - CM11**  
TAPPI Official Test Method T822

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>EM</b>	Emerson 1200 Series	<b>LC</b>	L&W Crush Tester 48
<b>LD</b>	L&W Crush Tester 248	<b>LZ</b>	L&W Crush Tester (model not specified)
<b>MB</b>	Messmer Buchel K440	<b>TH</b>	TMI Compression Tester, Model 17-76
<b>TU</b>	TMI Universal Crush Tester (TMI K440)	<b>TX</b>	TMI Digital Crush Tester (model not specified)
<b>XX</b>	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T826

Report #606 (C)

March 2020

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
3ZG8UY	13.3	13.3	13.2	13.1	13.2	-0.81	0.9	0.1 L	13.2	-1.19	0.9	0.3	16	LH
74NVKX	13.9 L	13.4	13.4	13.5	13.5	-0.09	0.9	0.2	13.7	0.03	1.0	0.6	16	LA
7B2PWT	14.3	13.1	12.9	13.5	13.5	-0.27	1.1	0.6	13.1	-1.39	1.0	0.5	16	LB
7L3CNQ	13.2 L	12.3 L	14.7 *L	12.2 L	13.1	-1.14	0.0	1.2 H	14.0	0.80	1.8	1.3 H	16	LA
A99XGT	12.4	14.1	14.1	13.1	13.4	-0.36	1.0	0.8	13.6	-0.27	1.1	0.6	12	LA
E2A2KP	19.5 XH	13.5 L	13.4	13.8	15.1	3.72 X	1.3	3.0 H	16.8	7.55 X	1.4	4.6 H	16	LZ
FVK48L	13.9	13.2	No DATA	No DATA	13.6	0.00	0.9	0.5	14.0	0.66	1.0	0.5	8	LA
HFXBWK	13.6	13.7	13.4	13.9	13.7	0.23	1.0	0.2	13.6	-0.34	0.9	0.2	16	LA
HUEBLJ	14.3 H	14.4	13.3	13.0	13.7	0.41	1.3	0.7	14.4	1.61	1.2	0.6	16	LU
KRKJ8H	13.2	13.6	13.8 L	13.1	13.4	-0.29	0.7	0.3	13.5	-0.47	0.7	0.2	16	TT
LCLY2E	13.2	13.8	14.0	13.0	13.5	-0.14	0.9	0.5	13.7	-0.11	0.9	0.4	16	LB
LD3VTE	13.7	12.8	12.8	12.7	13.0	-1.45	1.0	0.5	13.6	-0.34	1.1	0.5	16	LA
NNNAK7	22.8 XH	21.9 XH	23.0 XH	22.9 XH	22.7	22.51 X	1.7	0.5	23.0	22.79 X	1.7	0.8	12	TX
P9QGDA	13.6 L	13.8 L	13.9 L	13.7 L	13.8	0.49	0.4	0.1	13.7	-0.10	0.5	0.2	16	LA
PFD8Z6	14.2	14.1	13.5	13.9	13.9	0.96	1.0	0.3	14.0	0.80	1.1	0.3	16	LA
PK82W7	12.6	13.3	13.0	12.7	12.9	-1.69	1.1	0.3	13.0	-1.84	1.1	0.2	11	LB
PLG7CF	13.8	14.0	14.0	14.0	13.9	0.94	1.1	0.1	13.8	0.24	0.9	0.3	16	LA
QCTFN3	12.0 *	12.1 *	12.7	12.2 H	12.2	-3.25 X	1.0	0.3	12.3	-3.33 X	1.0	0.2	16	TT
RKJKU9	13.4	14.1 L	13.8	13.1	13.6	0.04	0.8	0.4	13.6	-0.22	0.9	0.4	16	LB
RY299D	13.9	14.1	13.5	13.9	13.9	0.72	0.9	0.3	14.1	0.94	1.0	0.4	12	LH
TCJKV8	No DATA	14.8	12.9	14.7 *	14.1	1.40	0.8	1.1	14.5	1.96 *	1.2	0.9	15	LA
U2FPC2	13.7	13.8	13.7	13.6	13.7	0.30	1.1	0.1 L	13.6	-0.17	1.1	0.4	16	LU
UJZFB2	14.1	13.6	14.4	13.2	13.8	0.71	1.0	0.6	14.1	1.07	1.2	0.5	16	XX
VTK7BY	13.1	15.7 *H	12.7	13.0 H	13.6	0.18	1.2	1.4 H	13.5	-0.55	1.1	0.7	15	LA
XG32G8	13.7	14.0	13.5	13.9	13.8	0.47	1.0	0.2	13.5	-0.41	1.1	0.3	16	LZ
YDXTP3	12.4	12.1 *	13.0	12.8	12.5	-2.54 *	1.1	0.4	12.9	-1.87	1.1	0.5	16	LH
ZTJZVY	14.1	14.3	14.6 H	14.4	14.3	1.94 *	1.1	0.2	14.2	1.19	1.2	0.3	8	LA

Consensus (All Labs) Results														
Wk Mean	13.48	13.65	13.52	13.35	Month Mean	13.56			Grand Mean	13.70				
Avg SDr	0.97	0.98	1.04	1.00	Avg SD	0.99			Avg SD	1.07				
SD btwn Labs	0.63	0.80	0.58	0.62	SD btwn Labs	0.40			SD btwn Labs	0.41				
Labs Incl	24	26	25	25	SD btwn Wks	0.57			SD btwn Wks	0.53				
Labs Excl	2	1	1	1	Labs Incl	24			Labs Incl	24				
Labs not Rcvd	1	0	1	1										





Containerboard Interlaboratory Testing Program  
Analysis 261  
**STFI, 26 lb Corrugating Medium - CM11**  
TAPPI Official Test Method T826

**Report #606 (C)**  
**March 2020**

**Key to Instrument Codes Reported by Participants**

<b>LA</b>	L&W Autoline	<b>LB</b>	L&W Model 152
<b>LH</b>	L&W 282	<b>LU</b>	L&W 52 without moisture correction (was 53)
<b>LZ</b>	L&W (model not specified)	<b>TT</b>	TMI Short Span Compression, 17-34 (MB K455)
<b>TX</b>	TMI (model not specified)	<b>XX</b>	Instrument make/model not specified by lab

End of Report