



## Containerboard Interlaboratory Testing Program

Participant Summary Report #659 - August 2024

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<a href="#"><u>223</u></a>	<a href="#"><u>42L1</u></a>	<a href="#"><u>STFI, 42 lb Linerboard</u></a>
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<a href="#"><u>240</u></a>	<a href="#"><u>CM13</u></a>	<a href="#"><u>Flat Crush Strength (CMT), 26 lb Corrugating Medium</u></a>
<a href="#"><u>250</u></a>	<a href="#"><u>CM13</u></a>	<a href="#"><u>Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium</u></a>
<a href="#"><u>255</u></a>	<a href="#"><u>CM13</u></a>	<a href="#"><u>Ring Crush (RCT), 26 lb Corrugating Medium</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; 35 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# Corrugating Medium	CM13	September 2023 - Current
	CM12	June 2022 - August 2023
31# Linerboard	31K1	August 2024 - Current
	35E3	June 2022 - June 2024
42# Linerboard	42L1	July 2024 - Current
	42H3	June 2023 - June 2024
52# Linerboard	52J1	November 2023 - Current
	56G2	May 2021 - May 2022

**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, agriculture, hemp, 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 100 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  
**Top to Bottom Box Compression Strength, Corrugated Boxes - BX18**  
 TAPPI Official Test Method T804

**Report #659**  
**August 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
3XXYR7	470.0	-2.24 *	41.79	505.9	-2.08 *	28.68	4	LL
4YMR3F	567.8	-0.33	30.24	587.0	0.23	34.72	4	ER
6CPHHR	573.6	-0.21	51.33	570.0	-0.25	3.12 L	3	EX
6NJY7T	582.9	-0.03	55.16	552.3	-0.76	31.48	4	ER
7NEWWF	557.2	-0.53	13.80	564.8	-0.40	16.92	4	EX
7Z7LUZ	592.0	0.15	5.43 L	587.8	0.25	18.42	4	EX
9VRP3V	639.5	1.08	55.89	617.0	1.09	19.44	4	LS
BHAR9C	572.8	-0.23	22.57	577.6	-0.03	9.46	4	LG
DAQ3M9	683.2	1.94 *	8.56 L	630.5	1.47	35.59	4	EX
DKUFJ3	600.6	0.32	15.78	589.2	0.30	21.03	3	EX
DNCHQ8	581.5	-0.06	59.92	570.6	-0.23	24.45	4	EX
EGQ4Z8	495.3	-1.75	63.54	504.7	-2.11 *	56.26	4	TB
JR7MJD	609.0	0.48	28.98	613.5	0.99	18.81	4	LO
JUXGLN	560.9	-0.46	14.02	569.2	-0.27	14.29	3	LG
KQU8PC	579.8	-0.09	23.61	562.7	-0.46	13.29	4	LM
KRNVBT	602.2	0.35	51.07	592.9	0.40	16.25	4	ES
MCPQWG	647.9	1.24	37.75	666.0	2.48 *	16.73	4	ER
MM7D4W	592.8	0.16	54.20	599.5	0.59	22.99	4	EX
NLUXCF	509.6	-1.47	21.61	558.1	-0.59	41.07	4	ET
QVAQEM	617.8	0.65	76.22	583.9	0.14	26.34	4	ER
R7JNVW	717.0	2.60 *	38.30	621.5	1.22	64.01 H	4	LG
U46Z92	557.0	-0.54	40.27	554.5	-0.69	27.11	4	LG
V2HLKR	585.9	0.03	39.35	598.6	0.56	26.23	4	LG
WP2DWQ	593.3	0.17	57.54	580.5	0.05	38.42	4	LS
WUGLMB	550.8	-0.66	40.49	531.4	-1.35	30.67	4	LG
XD3YCF	569.6	-0.29	11.80	556.8	-0.63	14.25	4	ER
XV3PU9	570.0	-0.28	25.66	581.4	0.08	12.50	4	LG

Consensus (All Labs) Results			
Month Mean	584.44	Grand Mean	578.82
Avg SD	40.99	Avg SD Months	28.60
SD btwn Labs	51.03	SD btwn Labs	35.09
Labs Incl	27	Labs Incl	27



**Containerboard Interlaboratory Testing Program**  
 Analysis 201  
**Top to Bottom Box Compression Strength, Corrugated Boxes - BX18**  
 TAPPI Official Test Method T804

**Report #659**  
**August 2024**

**Consensus By Method**

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	565.64	61.91	18.80	9
Clip sealing	590.66	42.70	6.22	17
Staple sealing	647.88	0.00	63.44	1

**Key to Instrument Codes Reported by Participants**

<b>ER</b> Emerson 6200 Series <b>ET</b> Emerson 7200 <b>LG</b> TLS / L.A.B. Validator Series <b>LM</b> Lansmont 122-15k <b>LS</b> Lansmont Squeezer	<b>ES</b> Emerson 8510 <b>EX</b> Emerson Apparatus (Model not specified) <b>LL</b> Lansmont 76-5K <b>LO</b> Lansmont 152-30k <b>TB</b> TMI Monitor/Compression Tester, Model 17-70
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**Containerboard Interlaboratory Testing Program**  
 Analysis 202  
**Edgewise Compressive Strength, by T811, Corrugated Board - EC16**  
 TAPPI Official Test Method T811

**Report #659**  
**August 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
23CEKH	47.7	0.00	2.37	48.1	-0.03	0.62	2	LC
6NJY7T	34.8	-2.18 *	3.06	42.7	-1.24	5.32 H	4	EN
7Z7LUZ	50.5	0.47	2.17	49.3	0.23	2.27	4	LC
8VQD4F	57.8	1.71	1.41	56.8	1.91 *	1.46	2	LC
9MXMWD	42.1	-0.96	2.85	43.2	-1.12	2.28	3	TS
9VRP3V	48.5	0.14	2.70	46.2	-0.47	3.05	4	LD
D6G6TU	39.3	-1.42	2.10	40.5	-1.75	1.04	3	TS
DAVKK8	48.8	0.19	1.63	48.0	-0.05	1.42	4	LD
DNCHQ8	47.5	-0.03	2.40	47.0	-0.28	1.80	4	LC
FZU7D3	50.4	0.45	1.94	49.9	0.36	0.45	4	XX
QBYWLG	51.6	0.67	1.38	51.6	0.76	0.00	1	XX
TEBLZA	50.7	0.50	1.84	52.7	1.00	1.94	4	XX
U46Z92	50.5	0.47	2.33	51.2	0.67	1.16	4	EX

Consensus (All Labs) Results			
Month Mean	47.71	Grand Mean	48.25
Avg SD	2.23	Avg SD Months	2.28
SD btwn Labs	5.91	SD btwn Labs	4.46
Labs Incd	13	Labs Incd	13

**Key to Instrument Codes Reported by Participants**

<b>EN</b>	Emerson 2200	<b>EX</b>	Emerson (model not specified)
<b>LC</b>	L&W Crush Tester 48	<b>LD</b>	L&W Crush Tester 248
<b>TS</b>	TMI Digital Crush Tester, Model 17-56	<b>XX</b>	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated Board - EC16**  
 TAPPI Official Test Method T839

**Report #659**  
**August 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
3LJ2M3	55.5	1.72	1.49	54.0	1.19	2.91	4	EM
4YMR3F	44.5	-1.27	1.73	46.8	-0.77	1.65	4	LD
6NJY7T	46.5	-0.72	2.42	47.1	-0.67	0.69	4	EN
7Z7LUZ	51.0	0.51	2.77	51.9	0.62	0.86	4	LC
8QX9CW	51.9	0.74	2.20	53.0	0.93	2.10	4	TE
9MXMWD	47.2	-0.54	2.50	44.8	-1.30	3.54	3	TS
9VRP3V	49.7	0.15	1.79	48.4	-0.31	0.98	4	LD
AVJ6RX	45.5	-0.98	1.99	46.3	-0.90	1.15	4	BU
BHAR9C	47.5	-0.46	1.71	45.9	-1.00	1.15	4	EM
BLW7WL	52.2	0.82	1.66	50.9	0.36	1.85	4	LD
D6G6TU	42.2	-1.89	1.46	43.5	-1.65	1.85	4	TS
DAQ3M9	49.9	0.21	1.05	52.6	0.81	1.87	4	CT
DNCHQ8	52.1	0.80	2.10	53.4	1.05	0.98	4	LC
EGLM39	50.2	0.28	1.55	55.8	1.68	4.08	4	EM
EGQ4Z8	42.6	-1.77	1.06	49.5	-0.01	4.64	4	LD
F2PPF4	50.1	0.26	2.56	49.0	-0.15	1.60	2	TD
FZU7D3	50.3	0.31	1.20	50.1	0.15	1.14	4	XX
GTEMU4	40.9	-2.25 *	1.86	42.0	-2.06 *	1.60	2	IX
JR7MJD	46.8	-0.64	2.30	42.1	-2.02 *	4.86	4	LD
KE3JWY	50.8	0.43	4.08 H	50.1	0.14	3.36	4	TG
KQU8PC	48.5	-0.18	1.24	48.1	-0.40	0.87	4	EM
KRNVBT	53.0	1.03	2.37	51.9	0.63	4.22	4	LD
MCPQWG	49.6	0.11	3.82 H	52.8	0.88	2.46	4	LD
MM7D4W	46.3	-0.78	3.52 H	48.8	-0.21	1.77	4	LD
NLUXCF	51.1	0.53	1.77	50.4	0.21	2.20	4	TD
QBYWLG	51.6	0.67	1.38	52.6	0.81	4.45	4	TU
QVAQEM	53.3	1.12	2.56	51.2	0.43	3.37	4	LD
R7JNVW	51.5	0.62	2.22	51.8	0.60	2.39	4	BU
TD3B7R	36.8	-3.34 X	3.47	34.8	-4.01 X	1.65	4	XX
U46Z92	47.7	-0.41	1.97	48.3	-0.35	0.69	4	LY
V2HLKR	44.0	-1.40	1.06	44.6	-1.35	2.91	4	EM
VT6R6P	54.8	1.51	2.48	56.6	1.90	1.30	4	TG
WP2DWQ	44.8	-1.18	0.72 L	45.6	-1.08	1.18	4	EM
XD3YCJ	50.9	0.48	1.64	50.7	0.31	1.42	4	EM
XDMFU8	51.9	0.73	3.04	51.0	0.40	1.17	2	TD
XV3PU9	54.4	1.42	2.17	53.7	1.11	1.52	4	MK





Containerboard Interlaboratory Testing Program  
Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated Board - EC16**  
TAPPI Official Test Method T839

**Report #659**  
**August 2024**

Consensus (All Labs) Results			
Month Mean	49.16	Grand Mean	49.57
Avg SD	2.18	Avg SD Months	2.46
SD btwn Labs	3.69	SD btwn Labs	3.68
Labs Incl	35	Labs Incl	35

**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>IX</b> | Instron (model not specified)               | <b>LC</b> | L&W Crush Tester 48                   |
| <b>LD</b> | L&W Crush Tester 248                        | <b>LY</b> | L&W 830                               |
| <b>MK</b> | Mark-10 ESM303                              | <b>TD</b> | TMI Digital Crush Tester, Model 17-09 |
| <b>TE</b> | TMI Monitor/Compression Tester, Model 17-60 | <b>TG</b> | TMI Digital Crush Tester, 17-76       |
| <b>TS</b> | TMI Digital Crush Tester, Model 17-56       | <b>TU</b> | TMI Universal Crush Tester (TMI K440) |
| <b>XX</b> | Instrument make/model not specified by lab  |           |                                       |



**Containerboard Interlaboratory Testing Program**  
 Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42L1**  
 TAPPI Official Test Method T807

**Report #659**  
**August 2024**

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	
4U6PVA_AL	112.8	114.9	112.1	116.1	114.0	-0.33	7.2	1.8	114.9	-0.06	8.6	2.0	8	AL
4YMR3F	105.0 *	113.0	109.1	111.9	109.8	-1.10	8.4	3.6	109.4	-1.30	8.1	3.8	8	LZ
6WD3DB_AL	124.1	121.7	121.7 H	123.4 H	122.7	1.26	11.5	1.2	121.7	1.50	10.1	1.9	8	AL
8FD62Q	116.3	116.7	115.9	118.1	116.8	0.17	8.2	1.0	117.1	0.44	8.0	3.2	8	LA
8FD62Q_AL	112.9	114.1	114.9	112.0	113.5	-0.42	4.8	1.3	113.6	-0.36	5.8	2.9	8	AL
8FHLYP	117.4	123.0	119.6	124.6	121.2	0.97	5.7	3.3	120.1	1.12	5.9	2.8	8	LA
8QX9CW	119.0	120.8	117.7	120.4	119.5	0.67	8.9	1.4	120.4	1.18	8.9	1.9	8	LC
9CU8BF	115.9	112.6	117.1	115.9	115.4	-0.08	9.3	1.9	116.1	0.22	9.0	3.0	8	LC
9CU8BF_AL	118.4	113.7	120.1	118.3	117.6	0.33	9.6	2.8	118.4	0.73	9.8	2.9	8	AL
9VRP3V	116.6	113.8	116.8	117.9	116.3	0.09	7.5	1.8	114.9	-0.06	9.2	3.1	8	LA
AZEYMD	143.0 X	140.0 XH	136.5 XH	128.5 *H	137.0	3.85 X	14.2	6.3 H	138.9	5.41 X	12.9	6.2	8	AX
CE6HEL	128.2 *H	123.9 H	130.2 *	135.9 X	129.6	2.50 *	11.2	5.0	125.3	2.30 *	10.7	8.2 H	8	ME
DAQ3M9	121.5	122.0	120.0	120.5	121.0	0.95	10.6	0.9	119.9	1.09	10.0	1.8	8	XX
DB6PYV_AL	116.1	115.5	114.6	117.2	115.8	0.01	7.7	1.1	114.7	-0.11	8.6	1.7	8	AL
DKUFJ3	No DATA	No DATA	114.2	No DATA	114.2	-0.29	6.4	0.0	114.4	-0.18	7.8	0.3	2	XX
DNCHQ8	119.3	114.2	115.8 L	115.8	116.3	0.09	7.7	2.1	115.1	-0.01	7.4	2.1	8	AH
DRBUL8_AL	115.6	119.7	120.6	121.4	119.3	0.64	8.0	2.6	118.2	0.69	8.3	2.3	8	AL
EGQ4Z8	107.3	114.4	104.7	105.0	107.9	-1.44	8.0	4.5	108.2	-1.59	7.9	3.6	8	XX
EKA2QJ	119.1 L	118.8 L	119.0	119.9	119.2	0.62	3.6	0.5	116.9	0.40	6.8	2.9	8	LZ
EV6AB8	118.8	111.4	115.9 L	113.8	115.0	-0.15	6.6	3.1	114.9	-0.06	8.1	3.8	8	XX
EY7D29	111.7	114.3	112.9	113.5	113.1	-0.49	4.9	1.1	110.8	-0.99	6.3	3.0	8	TP
FBDJR2_AL	118.4	114.6	118.7	124.4	119.0	0.59	5.8	4.0	118.2	0.69	5.9	3.0	8	AL
FZU7D3	113.4	113.7	113.0	113.4	113.4	-0.43	9.6	0.3 L	114.3	-0.20	9.1	1.7	8	LC
KH2URX	117.8	117.8	122.0	124.4	120.5	0.85	8.3	3.3	120.3	1.17	8.2	3.0	8	LJ
KJB6KV_AL	119.0	120.5	No DATA	122.2	120.6	0.87	7.9	1.6	118.7	0.80	7.7	4.3	6	AL
KRNVBT	111.0	112.9	111.9	118.2	113.5	-0.42	8.8	3.2	112.7	-0.56	8.6	2.3	8	LA
LLVBHX	119.6	120.0	115.3	119.7	118.7	0.52	7.7	2.2	116.8	0.36	13.4	4.9	8	LC
M26JXR_AL	118.7	114.7	119.6	115.5	117.1	0.24	7.8	2.4	116.2	0.23	7.9	2.3	8	AL
M9QCAQ	114.5	113.0	110.9	113.3	112.9	-0.52	7.6	1.5	110.7	-1.01	7.9	3.2	8	LC
MCPQWG	116.6 L	114.8	116.7	119.3	116.9	0.19	7.0	1.9	116.5	0.31	7.6	1.4	8	LA
MCPQWG_AI	116.4 L	114.8	117.7	116.6	116.4	0.10	6.9	1.2	116.4	0.27	6.9	1.2	4	XX
MF7T4L	113.4	111.5	108.9	No DATA	111.3	-0.82	6.8	2.3	112.7	-0.57	6.8	3.2	6	XX
MM7D4W	108.0	110.0	108.8	110.0	109.2	-1.20	7.2	1.0	108.8	-1.45	7.7	1.9	8	AH
NZCNBH	107.4	102.2 *	100.8 *	102.7 *	103.3	-2.27 *	5.0	2.9	105.4	-2.24 *	6.4	3.3	8	XX
P474ZH	115.5	110.8	110.8	113.6	112.7	-0.56	7.5	2.3	110.4	-1.09	7.3	3.9	8	XX



**Containerboard Interlaboratory Testing Program**  
 Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42L1**  
 TAPPI Official Test Method T807

**Report #659**  
**August 2024**

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	
P7TJPR	123.2	122.2	142.1	X NO DATA	129.2	2.43	* 7.1	11.2 H	126.3	2.52	* 5.9	7.9 H	6	AX
P7TJPR_AL	110.1	110.5	106.7	NO DATA	109.1	-1.22	6.1	2.1	109.2	-1.36	6.4	2.5	7	AL
PMHTA9_AL	120.0	116.2	118.1	117.7	118.0	0.40	8.6	1.5	118.6	0.77	7.3	1.4	8	AL
QCD4AJ_AL	111.6 H	114.0 H	112.0 H	110.7	112.1	-0.67	14.6	1.4	112.1	-0.70	14.6	1.4	4	AL
QVAQEM	115.0	110.8	115.9	117.1	114.7	-0.20	8.2	2.7	115.8	0.13	7.6	2.2	8	AH
QYQVBW	114.6	114.7	113.0	115.9	114.6	-0.23	5.2	1.2	113.6	-0.37	5.1	1.7	8	AH
RDJ8XR	113.5	114.8	113.9	115.1	114.3	-0.27	6.0	0.8	114.6	-0.12	6.7	1.1	8	LJ
RZFGJE_AL	111.8	118.2	116.5	113.9	115.1	-0.13	7.2	2.8	112.5	-0.61	7.2	3.4	8	AL
TA26QL	116.2	117.0	117.0	117.4	116.9	0.20	8.1	0.5	115.3	0.03	8.4	2.6	8	LA
TWFTEC	112.5	107.4	110.0	107.7	109.4	-1.16	9.1	2.4	109.7	-1.24	8.4	1.8	8	LA
U46Z92	123.0	123.8	125.0	126.9	124.7	1.61	8.6	1.7	123.8	1.97	* 8.8	2.3	8	AX
UPRAJ_AL	114.8	116.5	113.8	115.7	115.2	-0.11	8.1	1.2	115.1	-0.01	8.3	1.6	8	XX
UQKFTE_AL	114.6	116.6	115.5	116.8	115.9	0.02	7.7	1.1	117.6	0.56	8.1	2.1	8	AL
VDA8N2	125.1	124.8	125.5	126.9	125.6	1.77	9.4	0.9	119.9	1.08	9.0	6.1	8	LB
VTQ37J	118.6	126.8 *	119.4	NO DATA	121.6	1.05	4.9	4.5	120.7	1.26	5.1	4.2	7	AH
W6EPPJ_AL	109.0	107.3	107.0	106.9	107.6	-1.50	6.6	1.0	108.7	-1.47	5.6	2.3	8	XX
WXVLGG	111.0	112.0	110.2	107.6	110.2	-1.02	8.3	1.9	109.9	-1.19	8.7	1.8	8	LC
X2T3RP_AL	113.1	114.5	113.7	112.8	113.5	-0.42	7.0	0.7	113.2	-0.44	8.7	0.7 L	8	AL
Y7XHF4	102.9 *	102.2 *L	101.7 *L	102.2 *L	102.3	-2.46 *	3.1	0.5	110.7	-1.01	3.0	9.1 H	8	AH
YWTDNM	123.9	127.2 *H	126.4 *	129.1 *	126.6	1.97 *	10.3	2.1	129.1	3.17 X	10.3	4.4	8	LJ
ZB743F	111.3	113.9	108.6	NO DATA	111.3	-0.82	7.3	2.7	113.8	-0.31	7.5	3.0	7	LJ
ZB743F_AL	108.1	117.2	115.9	NO DATA	113.7	-0.37	7.2	4.9	111.6	-0.82	6.8	3.9	7	AL
ZUJMYJ	114.8 L	116.8 L	114.9 L	116.0 L	115.6	-0.03	1.9	1.0	113.7	-0.33	2.3	2.3	8	LA

Consensus (All Labs) Results														
Wk Mean	115.43	115.63	115.07	116.48	Month Mean	115.79			Grand Mean	115.17				
Avg SDr	7.67	8.33	7.80	7.75	Avg SD	7.82			Avg SD	8.04				
SD btwn Labs	5.10	5.19	5.74	6.15	SD btwn Labs	5.51			SD btwn Labs	4.39				
Labs Inclcd	56	56	55	50	SD btwn Wks	2.74			SD btwn Wks	3.34				
Labs Exclcd	1	1	2	1	Labs Inclcd	57			Labs Inclcd	56				
Labs not Rcvd	1	1	1	7										



Containerboard Interlaboratory Testing Program  
Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42L1**  
TAPPI Official Test Method T807

**Report #659**  
**August 2024**

**Key to Instrument Codes Reported by Participants**

<b>AH</b>	Perkins Model AH	<b>AL</b>	L & W Autoline 400
<b>AX</b>	Perkins Mullen Tester (model not specified)	<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>ME</b>	Messmer Automatic Burst Tester ME-06	<b>TP</b>	Technidyne PROFILE/Plus
<b>XX</b>	Instrument make/model not specified by lab		



**Containerboard Interlaboratory Testing Program**  
 Analysis 207  
**Bursting Strength (Mullen), 31 lb Linerboard - 31K1**  
 TAPPI Official Test Method T807

**Report #659**  
**August 2024**

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	
4U6PVA_AL	75.8	71.0	73.8	73.9	73.6	-0.82	5.9	2.0	73.6	-0.82	5.9	2.0	4	AL
4YMR3F	71.7	72.9	74.8	70.1	72.4	-1.26	5.6	2.0	72.4	-1.26	5.6	2.0	4	LA
6WD3DB_AL	78.6	77.2	77.8	79.2 L	78.2	0.80	6.0	0.9	78.2	0.80	6.0	0.9	4	XX
8FD62Q	75.2	80.8	76.3	77.7	77.5	0.56	4.8	2.4	77.5	0.56	4.8	2.4	4	LA
8FD62Q_AL	73.9	75.1	75.9	74.8	74.9	-0.36	3.9	0.8	74.9	-0.36	3.9	0.8	4	AL
8FHLYP	77.2	80.5	77.9	79.0	78.7	0.96	5.0	1.4	78.7	0.96	5.0	1.4	4	LA
8QX9CW	75.6	76.9	81.1	77.8	77.9	0.68	4.6	2.3	77.9	0.68	4.6	2.3	4	LC
9CU8BF	77.0	77.8	77.3	82.1	78.5	0.92	5.5	2.4	78.5	0.92	5.5	2.4	4	LC
9CU8BF_AL	76.3	75.5	76.9	77.0	76.4	0.17	6.4	0.7	76.4	0.17	6.4	0.7	4	XX
9VRP3V	75.6	74.8	76.4	74.0	75.2	-0.26	7.2	1.0	75.2	-0.26	7.2	1.0	4	LA
AZEYMD	75.5	79.6	78.1	74.7	77.0	0.36	6.4	2.3	77.0	0.36	6.4	2.3	4	AX
CE6HEL	73.2	76.2	83.8 *	82.3	78.9	1.04	5.2	5.0 H	78.9	1.04	5.2	5.0 H	4	ME
DAQ3M9	83.5 *	74.5	73.5	83.5 *	78.8	0.99	5.3	5.5 H	78.8	0.99	5.3	5.5 H	4	XX
DB6PYV_AL	72.1	76.0	77.9	73.5	74.9	-0.38	7.0	2.6	74.9	-0.38	7.0	2.6	4	AL
DKUFJ3	No DATA	No DATA	76.2	81.1 L	78.6	0.95	9.2	3.5	78.6	0.95	9.2	3.5	2	LA
DNCHQ8	78.2	77.2	73.6	76.9	76.5	0.19	6.0	2.0	76.5	0.19	6.0	2.0	4	AH
DRBUL8_AL	78.5	74.2	78.7	79.0	77.6	0.59	5.5	2.3	77.6	0.59	5.5	2.3	4	AL
EGQ4Z8	73.4	71.9	72.4	72.7 L	72.6	-1.18	5.4	0.6	72.6	-1.18	5.4	0.6	4	XX
EKA2QJ	75.6	75.2	72.5	73.1	74.1	-0.65	4.1	1.5	74.1	-0.65	4.1	1.5	4	LZ
EV6AB8	77.6	78.0	73.7	72.2	75.4	-0.20	4.9	2.9	75.4	-0.20	4.9	2.9	4	XX
EY7D29	76.9	72.8	73.5	73.5	74.2	-0.62	4.5	1.8	74.2	-0.62	4.5	1.8	4	TP
FBDJR2_AL	73.4	76.4	79.0 L	78.7	76.9	0.33	4.7	2.6	76.9	0.33	4.7	2.6	4	AL
KH2URX	72.8	79.4	76.5	79.4	77.0	0.38	6.2	3.1	77.0	0.38	6.2	3.1	4	LJ
KJB6KV_AL	74.8	71.6	No DATA	74.5	73.6	-0.82	6.2	1.8	73.6	-0.82	6.2	1.8	3	AL
KRNVBT	71.6	72.1	74.0	74.9	73.2	-0.98	6.2	1.6	73.2	-0.98	6.2	1.6	4	LA
LLVBHX	76.9	77.1	79.0	76.9	77.5	0.54	5.8	1.0	77.5	0.54	5.8	1.0	4	LC
M26JXR_AL	73.6	76.3	78.1	72.9	75.2	-0.25	6.0	2.4	75.2	-0.25	6.0	2.4	4	AL
M9QCAQ	74.1	77.4	74.4	72.0	74.5	-0.52	5.2	2.2	74.5	-0.52	5.2	2.2	4	LC
MCPQWG	76.2	76.9	74.9	75.1	75.8	-0.05	6.1	1.0	75.8	-0.05	6.1	1.0	4	LC
MCPQWG_AI	76.2	76.9	77.0	75.8	76.5	0.19	6.3	0.6	76.5	0.19	6.3	0.6	4	XX
MF7T4L	79.4	79.5	79.4	No DATA	79.4	1.24	4.2	0.1 L	79.4	1.24	4.2	0.1 L	3	XX
MM7D4W	76.4	73.6	76.4	70.8	74.3	-0.58	4.9	2.7	74.3	-0.58	4.9	2.7	4	AH
NZCNBH	70.4	71.0	71.7	69.5	70.6	-1.87	5.7	0.9	70.6	-1.87	5.7	0.9	4	XX
P474ZH	72.1	72.4	73.4	74.0	73.0	-1.04	5.0	0.9	73.0	-1.04	5.0	0.9	4	XX
P7TJPR	80.6	74.6	81.8	No DATA	79.0	1.08	4.5	3.9	79.0	1.08	4.5	3.9	3	AX



**Containerboard Interlaboratory Testing Program**  
 Analysis 207  
**Bursting Strength (Mullen), 31 lb Linerboard - 31K1**  
 TAPPI Official Test Method T807

**Report #659**  
**August 2024**

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
P7TJPR_AL	72.9	72.4	72.7	NO DATA	72.7	-1.16	4.8	0.3 L	72.7	-1.16	4.8	0.3 L	3	AL
PMHTA9_AL	77.8	77.9	77.4	78.0	77.8	0.65	4.4	0.3 L	77.8	0.65	4.4	0.3 L	4	AL
QCD4AJ_AL	72.0 H	75.6 H	67.4 *H	71.7 H	71.7	-1.50	13.8	3.3	71.7	-1.50	13.8	3.3	4	AL
QVAQEM	79.3	80.0	80.5	78.5	79.6	1.29	4.7	0.9	79.6	1.29	4.7	0.9	4	AH
QYQVBW	70.7	73.8	73.8	77.2	73.9	-0.73	4.4	2.7	73.9	-0.73	4.4	2.7	4	AH
RDJ8XR	78.8	78.5	79.0	79.5	79.0	1.07	4.4	0.4	79.0	1.07	4.4	0.4	4	LJ
RZFGJE_AL	72.4	68.1 *	72.8	71.8	71.3	-1.66	7.1	2.2	71.3	-1.66	7.1	2.2	4	AL
TA26QL	78.3	77.3	75.6	77.9	77.2	0.46	6.9	1.2	77.2	0.46	6.9	1.2	4	LA
TWFTEC	70.3	69.2 *	68.4 *	75.8 H	70.9	-1.77	7.7	3.4	70.9	-1.77	7.7	3.4	4	LA
U46Z92	81.6	80.9	80.8	82.2	81.4	1.92	4.8	0.7	81.4	1.92	4.8	0.7	4	AH
UPRAJ_AL	76.2	75.9	76.7	76.6	76.3	0.14	6.3	0.4	76.3	0.14	6.3	0.4	4	XX
UQKFTE_AL	77.9	76.0	77.1	75.8	76.7	0.28	5.2	1.0	76.7	0.28	5.2	1.0	4	AL
VDA8N2	79.8	79.0	81.6	81.2	80.4	1.57	5.6	1.2	80.4	1.57	5.6	1.2	4	LB
VTQ37J	82.4 *	82.4 *	81.4	NO DATA	82.1	2.17 *	3.6	0.6	82.1	2.17 *	3.6	0.6	3	AH
W6EPPJ_AL	72.6	72.0	72.5	72.9	72.5	-1.21	4.3	0.4	72.5	-1.21	4.3	0.4	4	XX
WXVLGG	69.1 *	73.4	71.4	74.0	72.0	-1.40	5.6	2.2	72.0	-1.40	5.6	2.2	4	LA
X2T3RP_AL	74.9	76.4	72.5	74.8	74.7	-0.44	6.7	1.6	74.7	-0.44	6.7	1.6	4	AL
Y7XHF4	80.2	80.4	80.7	80.2	80.4	1.57	4.1	0.2 L	80.4	1.57	4.1	0.2 L	4	AH
YWTDNM	79.3	77.1	78.2	77.3	78.0	0.72	5.2	1.0	78.0	0.72	5.2	1.0	4	LJ
ZB743F	77.7	75.8	77.0	NO DATA	76.8	0.32	3.5	1.0	76.8	0.32	3.5	1.0	3	LJ
ZB743F_AL	72.4	72.0	76.0	NO DATA	73.5	-0.87	6.7	2.2	73.5	-0.87	6.7	2.2	3	AL
ZUJMYJ	69.9 L	70.6 L	73.7 L	72.0	71.6	-1.55	2.1	1.7	71.6	-1.55	2.1	1.7	4	LA

Consensus (All Labs) Results														
Wk Mean	75.65	75.68	76.15	76.08	Month Mean	75.94			Grand Mean	75.94				
Avg SDr	5.74	5.69	5.83	5.77	Avg SD	5.79			Avg SD	5.79				
SD btwn Labs	3.34	3.18	3.36	3.43	SD btwn Labs	2.83			SD btwn Labs	2.83				
Labs Incl	56	56	56	51	SD btwn Wks	2.09			SD btwn Wks	2.09				
Labs Excl	0	0	0	0	Labs Incl	57			Labs Incl	57				
Labs not Rcvd	1	1	1	6										



Containerboard Interlaboratory Testing Program  
Analysis 207  
**Bursting Strength (Mullen), 31 lb Linerboard - 31K1**  
TAPPI Official Test Method T807

**Report #659**  
**August 2024**

**Key to Instrument Codes Reported by Participants**

<b>AH</b>	Perkins Model AH	<b>AL</b>	L & W Autoline 400
<b>AX</b>	Perkins Mullen Tester (model not specified)	<b>LA</b>	L&W Bursting Strength Tester
<b>LB</b>	L&W Burst-O-Matic	<b>LC</b>	L&W Autoline (207 Enrollment)
<b>LJ</b>	L&W Bursting Strength Tester J-Type	<b>LZ</b>	L&W (model not specified)
<b>ME</b>	Messmer Automatic Burst Tester ME-06	<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 - 42L1**  
 TAPPI Official Test Method T822

**Report #659**  
**August 2024**

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	
3LJ2M3	99.1	99.6	99.2	100.3	99.6	1.07	3.0	0.6	100.0	1.39	3.8	1.3	8	EM
4EZ23J	106.1 * H	94.6 H	95.3 H	95.6 H	97.9	0.65	9.2	5.5 H	97.9	0.82	9.2	5.5	4	EX
4U6PVA	98.3	101.2	95.1	98.0	98.1	0.71	3.5	2.5	98.0	0.84	3.3	1.8	8	LD
4YMR3F	91.9	91.1	92.2	94.6	92.5	-0.74	3.0	1.5	91.1	-0.99	3.0	2.1	8	LD
6LTQ2Y	94.8 L	96.5 L	95.6 L	No DATA	95.6	0.07	0.7	0.8	95.9	0.29	0.8	0.9	6	MZ
6NJY7T	90.6	89.3	89.0	90.0	89.7	-1.45	3.2	0.7	91.0	-1.03	2.7	1.5	8	EN
6WD3DB	76.3 XH	76.4 XH	77.2 XH	99.2	82.3	-3.36 X	7.4	11.3 H	85.2	-2.57 *	6.9	11.4 H	8	LZ
8FD62Q	94.7	95.1	97.0	98.5	96.3	0.24	2.8	1.7	96.1	0.35	2.7	1.3	8	LD
8FHLYP	99.5	99.9	96.3	99.1	98.7	0.85	4.5	1.6	98.5	0.97	3.9	1.9	8	LC
8QX9CW	101.2	99.4	99.2	94.7	98.6	0.83	3.1	2.8	97.2	0.64	3.1	2.8	8	MB
8VQD4F	95.0	92.2	93.0	95.3	93.9	-0.38	3.2	1.5	92.8	-0.54	2.9	1.9	8	LC
9833FP	97.1	94.2	96.5	95.1	95.7	0.09	3.1	1.3	94.0	-0.22	3.1	2.4	8	LD
98GL29	94.3 L	92.4 L	93.9	92.6 L	93.3	-0.53	1.5	0.9	93.7	-0.32	1.6	0.8 L	8	LZ
9CU8BF	87.5	90.1	89.9	82.4 X	87.5	-2.02 *	3.7	3.6	88.1	-1.82	3.7	3.6	8	LD
9VRP3V	93.5 L	99.2	100.6	99.6	98.2	0.74	2.5	3.2	94.5	-0.10	2.5	4.6	8	LD
AZEYMD	92.0 H	88.3	85.7 *	86.2 *	88.1	-1.87	4.5	2.9	87.3	-2.02 *	5.3	3.4	8	LD
BQ4W2D	94.4 L	96.3 L	95.5 L	No DATA	95.4	0.02	0.6	1.0	95.7	0.23	0.7	1.0	6	MZ
CE6HEL	91.9 H	103.0	102.1	105.1 *	100.5	1.32	5.1	5.9 H	100.4	1.48	4.4	6.9 H	8	LX
DNCHQ8	99.3	97.4 L	97.5	95.0	97.3	0.49	2.9	1.8	96.9	0.55	3.0	1.3	8	LC
DZJQ4J	99.4 H	101.0	98.0	98.1	99.1	0.97	4.2	1.4	98.5	0.97	4.0	1.4	8	TU
EV6AB8	100.6	97.1	108.2 X	105.3 *	102.8	1.91	4.4	4.9 H	100.3	1.45	4.7	5.0	8	LD
EY7D29	97.1	96.4	92.1	93.5	94.8	-0.15	2.8	2.4	93.0	-0.49	2.6	2.6	8	TX
F2PPF4	95.0 L	95.1	95.7	95.1	95.2	-0.03	1.7	0.3 L	95.2	0.10	1.7	0.3 L	4	MB
F4X3W7	99.6	100.0	97.6	97.9	98.8	0.87	3.8	1.2	97.2	0.64	3.6	1.9	8	MB
KJB6KV	94.7	96.1	97.5	95.8	96.0	0.17	3.2	1.2	96.2	0.35	3.0	0.9	8	LC
KPJ9V4	90.1	91.8	92.7	95.4	92.5	-0.73	3.3	2.2	92.7	-0.58	2.9	1.5	8	LD
LHU8RV	100.6	102.4	102.9	100.1	101.5	1.56	2.5	1.4	101.8	1.87	2.6	1.4	8	LD
LLFRXZ	86.8 *	88.3	85.3 *	87.0 *	86.8	-2.19 *	3.7	1.2	87.9	-1.85	3.8	1.6	8	EM
LLVBHX	99.5	96.3	96.8	96.7	97.3	0.50	2.8	1.5	96.7	0.50	2.6	2.1	8	LD
M26JXR	98.1	98.9	96.8 L	97.8	97.9	0.65	1.7	0.9	97.0	0.57	1.8	1.2	8	LD
M9QCAQ	92.1	96.5	94.9	94.2	94.4	-0.24	4.2	1.8	94.8	-0.01	4.0	1.6	8	LD
MF7T4L	91.8	90.9	93.1 H	No DATA	91.9	-0.89	5.9	1.1	90.0	-1.30	5.6	2.5	6	TU
NZCNBH	98.2	100.0	96.1	92.8	96.8	0.36	2.5	3.1	94.2	-0.19	3.0	3.5	8	LZ
QVAQEM	93.4	93.8	92.5	92.9	93.2	-0.57	2.6	0.6	94.4	-0.11	2.6	1.8	8	LD
RDJ8XR	95.9	96.1	95.5	96.0	95.9	0.13	2.3	0.3 L	95.5	0.18	2.2	0.6 L	8	LD





**Containerboard Interlaboratory Testing Program**  
 Analysis 215  
**Ring Crush, 42 lb Linerboard - 42L1**  
 TAPPI Official Test Method T822

**Report #659**  
**August 2024**

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
U46Z92	96.7	96.2	96.5	93.3	95.7	0.08	3.3	1.6	95.0	0.05	3.0	1.6	8	LG
UF32PC	98.8	99.6	100.3	99.0	99.4	1.04	2.8	0.6	100.0	1.39	2.8	1.0	8	LD
VDA8N2	98.0	97.0	99.7	98.6	98.3	0.76	3.2	1.1	97.7	0.78	3.8	1.4	8	LD
VT6R6P	92.2	94.0	93.0	94.4	93.4	-0.51	2.5	1.0	94.4	-0.12	2.6	1.4	8	TH
W6EPPJ	93.3	94.0	92.9	95.8	94.0	-0.35	2.4	1.3	94.5	-0.11	2.6	1.2	8	LD
WXVLGG	94.8	96.0	95.5	94.7	95.2	-0.04	2.9	0.6	94.8	-0.02	2.9	0.7	L 8	LD
X2T3RP	67.5 <b>XH</b>	68.2 <b>XH</b>	67.2 <b>XH</b>	67.4 <b>XH</b>	67.6	-7.13 <b>X</b>	9.1	0.4	68.2	-7.13 <b>X</b>	8.5	0.9	8	LD
Y7XHF4	85.7 <b>*</b>	85.6 <b>*</b>	85.3 <b>*</b>	85.8 <b>*</b>	85.6	-2.50 <b>*</b>	4.1	0.2 <b>L</b>	90.5	-1.18	3.2	5.2	8	LD
ZUJMYJ	92.0 <b>L</b>	91.7 <b>L</b>	92.0 <b>L</b>	92.1 <b>L</b>	91.9	-0.88	0.7	0.2 <b>L</b>	91.7	-0.83	0.7	0.3 <b>L</b>	8	TU

Consensus (All Labs) Results														
Wk Mean	95.38	95.58	95.03	95.67	Month Mean	95.37			Grand Mean	94.85				
Avg SDr	3.42	3.62	3.42	3.48	Avg SD	3.49			Avg SD	3.56				
SD btwn Labs	4.21	4.08	4.08	4.17	SD btwn Labs	3.90			SD btwn Labs	3.73				
Labs Incd	42	42	41	39	SD btwn Wks	2.16			SD btwn Wks	3.06				
Labs Exclcd	2	2	3	2	Labs Incd	42			Labs Incd	43				
Labs not Rcvd	0	0	0	3										

**Key to Instrument Codes Reported by Participants**

<b>EM</b> Emerson 1200	<b>EN</b> Emerson 2200
<b>EX</b> Emerson (model not specified)	<b>LC</b> L&W Crush Tester 48
<b>LD</b> L&W Crush Tester 248	<b>LG</b> L&W 753
<b>LX</b> L&W 506	<b>LZ</b> L&W Crush Tester (model not specified)
<b>MB</b> Messmer Buchel K440	<b>MZ</b> Messmer Buchel (model not specified)
<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)	



**Containerboard Interlaboratory Testing Program**  
 Analysis 217  
**Ring Crush, 31 lb Linerboard - 31K1**  
 TAPPI Official Test Method T822

**Report #659**  
**August 2024**

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	
3LJ2M3	73.4	73.4	74.4	75.4	74.1	0.51	2.3	1.0	74.1	0.51	2.3	1.0	4	EM
4U6PVA	76.0	74.0	70.9	72.9	73.4	0.21	2.9	2.1	73.4	0.21	2.9	2.1	4	LD
4YMR3F	72.1	68.9	69.9	69.9	70.2	-1.15	3.5	1.3	70.2	-1.15	3.5	1.3	4	LD
6LTQ2Y	75.5 L	74.5 L	75.0	NO DATA	75.0	0.86	0.6	0.5	75.0	0.86	0.6	0.5	3	MZ
6NJY7T	69.2	69.1	68.0 *	68.2	68.6	-1.80	2.7	0.6	68.6	-1.80	2.7	0.6	4	EN
6WD3DB	55.1 XH	74.9	56.3 XH	55.5 XH	60.5	-5.22 X	7.2	9.7 H	60.5	-5.22 X	7.2	9.7 H	4	LZ
8FD62Q	76.3	73.9	74.0	76.5	75.2	0.94	2.8	1.4	75.2	0.94	2.8	1.4	4	LD
8FHLYP	78.8	77.1	73.3	73.4	75.7	1.14	2.2	2.7	75.7	1.14	2.2	2.7	4	LC
8QX9CW	74.5	76.4	75.0	75.5	75.4	1.01	2.7	0.8	75.4	1.01	2.7	0.8	4	MB
8VQD4F	71.6	70.8	71.9	72.7	71.7	-0.51	2.5	0.8	71.7	-0.51	2.5	0.8	4	LC
9833FP	73.3	72.2	72.5	74.0	73.0	0.04	2.7	0.8	73.0	0.04	2.7	0.8	4	LD
98GL29	71.0 L	71.9	72.4 L	70.3	71.4	-0.63	1.7	0.9	71.4	-0.63	1.7	0.9	4	LZ
9CU8BF	67.5	70.3	70.5	66.3 *	68.7	-1.79	3.5	2.1	68.7	-1.79	3.5	2.1	4	LD
9VRP3V	74.8	75.3	73.9	74.8	74.7	0.72	3.1	0.6	74.7	0.72	3.1	0.6	4	LD
AZEYMD	63.0 X	62.6 XH	60.9 X	61.5 XH	62.0	-4.57 X	5.6	1.0	62.0	-4.57 X	5.6	1.0	4	LD
BQ4W2D	75.1 L	75.1 L	74.9	NO DATA	75.1	0.89	0.7	0.1 L	75.1	0.89	0.7	0.1 L	3	MZ
CE6HEL	58.7 XH	73.3	80.6 X	79.3 *	73.0	0.01	4.8	10.0 H	73.0	0.01	4.8	10.0 H	4	LX
DNCHQ8	70.9	73.4	72.9	71.9	72.2	-0.29	2.7	1.1	72.2	-0.29	2.7	1.1	4	LC
DZJQ4J	76.4 H	77.6 H	73.4 H	77.4	76.2	1.35	4.8	1.9	76.2	1.35	4.8	1.9	4	TU
EV6AB8	74.3	69.0 H	72.5 H	74.7	72.6	-0.13	4.2	2.6	72.6	-0.13	4.2	2.6	4	LD
EY7D29	74.1	75.9	73.0	72.6	73.9	0.40	2.9	1.5	73.9	0.40	2.9	1.5	4	TX
F2PPF4	83.9 X	83.6 X	83.2 X	83.2 X	83.5	4.40 X	1.7	0.4	83.5	4.40 X	1.7	0.4	4	MB
F4X3W7	73.7	74.8	75.5	74.8 H	74.7	0.74	3.4	0.8	74.7	0.74	3.4	0.8	4	MB
KJB6KV	71.8	75.9	71.5	73.5	73.2	0.10	3.1	2.0	73.2	0.10	3.1	2.0	4	LC
KPJ9V4	66.1 *	69.9	69.9	69.5	68.9	-1.71	2.7	1.8	68.9	-1.71	2.7	1.8	4	LD
LHU8RV	77.9	78.8 *	77.1 *	77.4	77.8	2.03 *	2.8	0.7	77.8	2.03 *	2.8	0.7	4	LD
LLFRXZ	67.7	68.9	68.7	67.2 *	68.1	-2.02 *	3.3	0.8	68.1	-2.02 *	3.3	0.8	4	EM
LLVBHX	75.0	74.4	75.4	74.9	74.9	0.83	2.7	0.4	74.9	0.83	2.7	0.4	4	LD
M26JXR	73.6	74.0	74.1	75.3	74.2	0.55	2.1	0.8	74.2	0.55	2.1	0.8	4	LD
M9QCAQ	71.7	70.5	70.6	68.5	70.3	-1.09	3.4	1.3	70.3	-1.09	3.4	1.3	4	LD
MF7T4L	67.8	68.3	70.0	H NO DATA	68.7	-1.78	4.0	1.1	68.7	-1.78	4.0	1.1	3	TU
NZCNBH	72.8	74.0	74.8	71.0	73.1	0.08	2.9	1.6	73.1	0.08	2.9	1.6	4	LZ
QVAQEM	71.7	71.6	71.1	70.5	71.2	-0.71	2.4	0.6	71.2	-0.71	2.4	0.6	4	LD
RDJ8XR	75.5	74.6	75.8	75.0	75.2	0.96	2.1	0.5	75.2	0.96	2.1	0.5	4	LD
U46Z92	71.8	73.8	72.8	71.8	72.5	-0.17	3.0	0.9	72.5	-0.17	3.0	0.9	4	LG



**Containerboard Interlaboratory Testing Program**  
 Analysis 217  
**Ring Crush, 31 lb Linerboard - 31K1**  
 TAPPI Official Test Method T822

**Report #659**  
**August 2024**

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
UF32PC	74.9	75.0	74.2	75.4	74.9	0.82	2.0	0.5	74.9	0.82	2.0	0.5	4	LD
VT6R6P	70.6	72.2	71.4 L	71.8	71.5	-0.60	1.9	0.7	71.5	-0.60	1.9	0.7	4	TH
W6EPPJ	71.6	72.9	72.9	72.5	72.5	-0.19	2.0	0.6	72.5	-0.19	2.0	0.6	4	LD
WXVLGG	72.9	73.4	71.0	72.8	72.5	-0.18	2.3	1.1	72.5	-0.18	2.3	1.1	4	LD
X2T3RP	50.6 XH	50.6 XH	51.0 XH	51.3 XH	50.9	-9.23 X	8.5	0.3 L	50.9	-9.23 X	8.5	0.3 L	4	LD
Y7XHF4	74.1	74.3	74.7	74.3	74.3	0.58	3.2	0.2 L	74.3	0.58	3.2	0.2 L	4	LD
ZUJMYJ	64.5 *L	63.5 XL	63.3 XL	63.2 XL	63.6	-3.90 X	0.7	0.6	63.6	-3.90 X	0.7	0.6	4	TU

Consensus (All Labs) Results														
Wk Mean	72.70	73.26	72.77	73.00	Month Mean	72.93			Grand Mean	72.93				
Avg SDr	2.74	2.89	2.96	2.79	Avg SD	2.91			Avg SD	2.91				
SD btwn Labs	3.19	2.60	2.16	3.01	SD btwn Labs	2.39			SD btwn Labs	2.39				
Labs Incl	37	38	36	34	SD btwn Wks	2.07			SD btwn Wks	2.07				
Labs Excl	5	4	6	5	Labs Incl	37			Labs Incl	37				
Labs not Rcvd	0	0	0	3										

**Key to Instrument Codes Reported by Participants**

EM	Emerson 1200	EN	Emerson 2200
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
MZ	Messmer Buchel (model not specified)	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)	TX	TMI Digital Crush Tester (model not specified)



**Containerboard Interlaboratory Testing Program**  
 Analysis 223  
**STFI, 42 lb Linerboard - 42L1**  
 TAPPI Official Test Method T826

**Report #659**  
**August 2024**

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	
4U6PVA_AL	25.6	26.5	25.2	25.7	25.7	0.81	1.7	0.6	25.7	1.15	1.7	0.4	8	AL
4YMR3F	25.0	25.3	25.6	25.2	25.3	0.41	1.5	0.3	25.1	0.51	1.5	0.4	8	LY
62AN7Y	26.8	26.3	26.8	L 25.8	26.4	1.41	1.5	0.5	26.0	1.59	1.5	0.6	8	LA
6LTQ2Y	25.4 L	25.1 L	25.5	L NO DATA	25.3	0.45	0.2	0.2	24.4	-0.21	0.3	1.0	6	LZ
6NJY7T	23.6	23.3	23.1	23.7	23.4	-1.17	1.5	0.3	23.6	-1.09	1.5	0.4	8	LZ
6WD3DB_AL	24.2	23.1	23.9	L 23.3	23.6	-1.00	1.5	0.5	23.3	-1.46	1.3	0.5	8	AL
7VFCJ2	25.5 H	24.3 H	24.8	H NO DATA	24.9	0.06	3.0	0.6	24.6	-0.06	2.4	0.8	7	LH
8FD62Q_AL	24.7	25.0	24.2	L 25.6 L	24.9	0.06	1.4	0.6	24.8	0.22	1.7	0.5	8	AL
8FHLYP	24.5	24.2	24.7	L 24.4	24.5	-0.29	1.6	0.2	24.3	-0.33	1.6	0.4	8	LA
8QX9CW	26.8	26.7	26.3	24.9	26.2	1.19	2.0	0.9	25.2	0.66	1.8	1.3	8	LA
9CU8BF	23.6 L	23.8	23.4	23.0	23.4	-1.16	1.8	0.3	23.6	-1.08	1.6	0.3	8	LZ
9CU8BF_AL	38.9 XL	39.2 XL	39.8 XL	40.2 XL	39.5	12.59 X	0.0	0.6	39.6	16.63 X	0.0	0.8	8	AL
9VRP3V	24.1 H	25.3	25.0	25.7	25.0	0.20	1.9	0.7	24.9	0.27	1.8	0.5	8	LY
A6U8DX_AL	25.7	26.3	25.6	26.0	25.9	0.92	1.6	0.3	25.5	0.97	1.6	0.6	8	AL
AZEYMD	25.0 L	25.2 L	25.0 L	24.7 L	25.0	0.15	0.0	0.2	25.0	0.38	0.0	0.2	8	LH
BQ4W2D	25.0 L	24.9 L	25.4	L NO DATA	25.1	0.26	0.4	0.3	24.4	-0.26	0.4	0.8	6	LZ
CE6HEL	24.6 H	27.1	25.9	25.7	25.8	0.87	2.2	1.0	25.6	1.15	3.0	1.8 H	8	LZ
DB6PYV_AL	29.5 X	29.3 X	29.8 X	30.0 X	29.6	4.13 X	2.0	0.3	29.3	5.23 X	2.1	0.7	8	AL
DL2VRU	25.2	24.8	24.3	24.7	24.8	-0.03	1.6	0.4	24.9	0.35	1.5	0.6	8	LU
DNCHQ8	23.6	24.7	24.4	24.0 L	24.2	-0.51	1.4	0.5	24.3	-0.34	1.5	0.5	8	LU
DRBUL8_AL	24.3	24.9	24.0	24.3	24.4	-0.35	1.4	0.4	24.0	-0.73	1.5	0.8	8	AL
DXEXDR	28.4 *	26.7	26.8	27.4 *	27.3	2.18 *	1.7	0.8	27.3	2.96 X	1.8	0.6	8	LH
DZJQ4J	25.8	25.4	26.0	24.8	25.5	0.61	1.8	0.5	25.5	0.93	1.6	0.5	8	LA
EKA2QJ	23.9	23.2	22.8	25.5	23.9	-0.79	1.3	1.2	23.1	-1.64	1.5	1.4	8	LY
F4X3W7	23.8	24.3	24.8	24.5	24.4	-0.37	1.5	0.4	24.3	-0.32	1.6	0.4	8	LA
FBDJR2	23.7	23.6	24.2	23.1	23.7	-0.97	1.3	0.5	24.0	-0.69	1.4	0.6	8	LU
FZU7D3	25.2	25.0	26.6	L 25.0 L	25.5	0.57	1.5	0.8	24.8	0.22	1.5	1.1	8	LA
GVFQLQ	26.6	26.4	26.4	25.7	26.3	1.28	1.6	0.4	26.5	2.04 *	1.7	0.5	8	LH
JR7MJD	25.4	24.7	24.3	24.9 L	24.8	0.02	1.3	0.4	24.4	-0.21	1.5	0.7	8	LH
KH2URX	27.0	24.9	25.6	24.3	25.4	0.56	1.8	1.2	25.0	0.41	1.9	0.9	8	LH
KJB6KV	25.0	24.9	NO DATA	24.1	24.7	-0.11	2.0	0.5	24.1	-0.59	1.9	0.8	6	LU
LHU8RV	24.2	24.3	23.8	23.7	24.0	-0.69	1.3	0.3	24.2	-0.41	1.5	0.4	8	LH
LLVBHX	24.9	24.6	25.4	25.2	25.0	0.22	1.5	0.4	24.5	-0.11	1.6	0.7	8	LA
M26JXR_AL	24.7	25.5	24.5	24.6	24.9	0.06	1.8	0.5	24.9	0.27	1.6	0.6	8	AL
M9QCAQ	25.9	26.5	26.1	26.3	26.2	1.22	1.7	0.2	25.9	1.43	1.7	0.8	8	LA



**Containerboard Interlaboratory Testing Program**  
 Analysis 223  
**STFI, 42 lb Linerboard - 42L1**  
 TAPPI Official Test Method T826

**Report #659**  
**August 2024**

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	
MCPQWG_AI	26.3	24.5	25.4	25.8	25.5	0.61	1.3	0.8	25.5	0.99	1.3	0.8	4	XX
MF7T4L	23.7	24.5	25.1	No DATA	24.5	-0.29	1.7	0.7	24.1	-0.59	1.6	0.6	6	TT
NZCNBH	22.9	22.7	24.3	24.3	23.5	-1.07	1.6	0.9	24.3	-0.32	1.6	1.0	8	XX
P474ZH	24.3	26.0	26.6	26.4	25.8	0.89	1.4	1.0	25.0	0.43	1.4	1.2	8	LH
P7TJPR	25.2	25.2	25.0	No DATA	25.1	0.28	1.5	0.1	25.4	0.89	1.5	0.3	7	LU
P7TJPR_AL	24.5 L	25.7	25.0	No DATA	25.1	0.23	1.4	0.6	24.5	-0.09	1.4	1.0	7	AL
PMHTA9_AL	22.9 L	22.2 *	23.3	22.5 *	22.8	-1.74	1.2	0.5	23.2	-1.59	1.4	0.7	8	AL
QCD4AJ_AL	637.4XL	651.1 XL	639.6 XL	632.2 XL	640.1	525.41 X	0.0	8.0 H	640.1	683.20X	0.0	8.0 H	4	AL
QVAQEM	23.9	24.9	24.0	25.1	24.5	-0.27	1.4	0.6	24.3	-0.34	1.6	0.5	8	LU
RZFGJE_AL	23.2	23.9	23.6	24.2	23.7	-0.91	1.5	0.4	23.8	-0.90	1.4	0.5	8	AL
TA26QL	24.1	24.9	25.0	26.5 H	25.1	0.29	3.7	1.0	25.3	0.78	2.9	0.7	8	LY
TC8T4Q	26.3	25.6	26.1	25.0	25.7	0.82	1.3	0.6	25.2	0.64	1.5	0.9	8	LZ
TD3B7R	23.4	23.3	25.1	24.4 L	24.0	-0.63	1.3	0.9	23.6	-1.13	1.2	0.8	8	XX
TWFTEC	26.5	26.2	25.5	26.6	26.2	1.21	2.0	0.5	26.1	1.63	1.9	0.4	8	LH
U46Z92	26.2 L	26.2 L	26.0 L	25.2 L	25.9	0.95	0.0	0.5	25.4	0.87	1.6	0.7	8	BK
UPRAJ_AL	24.1 L	25.2	24.4 L	24.5	24.6	-0.20	1.3	0.5	24.4	-0.27	1.5	0.5	8	XX
UQKFTE_AL	24.3	24.4	25.2	25.9	25.0	0.14	1.7	0.8	24.8	0.25	1.9	0.8	8	AL
VDA8N2	26.0 L	25.6	26.2	26.6	26.1	1.12	1.3	0.4	25.7	1.25	1.5	0.5	8	LU
VTQ37J	27.7 *	26.5	26.4	No DATA	26.9	1.77	1.7	0.7	26.9	2.56 *	1.8	0.7	7	LU
W6EPPJ_AL	23.6	24.3	23.6	23.4	23.7	-0.92	1.3	0.4	24.1	-0.53	1.7	0.7	8	XX
WWKJVH	24.0	24.1	23.8	23.8	23.9	-0.74	1.4	0.2	23.8	-0.85	1.3	0.5	8	LW
WXVLGG	23.7	24.0	24.0 L	25.3 L	24.3	-0.45	1.4	0.7	24.3	-0.37	1.4	0.7	8	LA
X2T3RP	23.8	22.6	23.1	22.9	23.1	-1.44	1.8	0.5	23.6	-1.10	1.7	0.6	8	LY
X2T3RP_AL	24.3	24.4	23.3	23.3	23.8	-0.84	1.6	0.6	23.7	-0.97	1.6	0.5	8	AL
Y7XHF4	27.5 *H	26.3 H	27.2 *H	26.9 H	27.0	1.87	5.7	0.5	31.5	7.69 X	4.5	5.0 H	8	XX
ZB743F	21.5 *	22.7	23.2	No DATA	22.5	-1.98 *	1.5	0.9	22.9	-1.89	1.4	0.8	7	LH
ZB743F_AL	19.2 XL	22.5	23.7	No DATA	21.8	-2.55 *	1.2	2.3 H	22.5	-2.34 *	1.4	1.5	7	AL
ZUJMYJ	21.6 *	22.6	22.5 *	22.1 *	22.2	-2.21 *	1.4	0.5	21.7	-3.25 X	1.4	0.7	8	XX

Consensus (All Labs) Results														
Wk Mean	24.79	24.80	24.87	24.83	Month Mean	24.79	Grand Mean	24.61						
Avg SDr	1.77	1.71	1.71	2.00	Avg SD	1.78	Avg SD	1.63						
SD btwn Labs	1.38	1.21	1.15	1.19	SD btwn Labs	1.17	SD btwn Labs	0.90						
Labs Incl	59	60	59	51	SD btwn Wks	0.67	SD btwn Wks	0.76						
Labs Excl	4	3	3	3	Labs Incl	60	Labs Incl	57						
Labs not Rcvd	0	0	1	9										



Containerboard Interlaboratory Testing Program  
Analysis 223  
**STFI, 42 lb Linerboard - 42L1**  
TAPPI Official Test Method T826

**Report #659**  
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**Key to Instrument Codes Reported by Participants**

<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 225  
**STFI, 31 lb Linerboard - 31K1**  
 TAPPI Official Test Method T826

**Report #659**  
**August 2024**

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			
4U6PVA_AL	20.7	21.3	20.8	20.8	L	20.9	1.15	1.5	0.3	20.9	1.15	1.5	0.3	4	AL	
4YMR3F	19.9	20.6	L 20.4	20.4		20.3	0.41	1.3	0.3	20.3	0.41	1.3	0.3	4	LY	
62AN7Y	20.6	21.8	* 21.2	22.4	*	21.5	1.87	1.6	0.8	21.5	1.87	1.6	0.8	4	LA	
6LTQ2Y	20.1	L 20.1	L 20.3	L	No DATA	20.2	0.25	0.4	0.1	20.2	0.25	0.4	0.1	3	LZ	
6NJY7T	18.5	18.7	18.9	19.0		18.8	-1.53	1.2	0.2	18.8	-1.53	1.2	0.2	4	LZ	
6WD3DB_AL	18.7	L 18.5	18.8	18.7		18.7	-1.65	1.0	0.1	18.7	-1.65	1.0	0.1	4	XX	
7VFCJ2	19.9	19.5	19.7	19.5		19.6	-0.44	1.7	0.2	19.6	-0.44	1.7	0.2	4	LH	
8FD62Q_AL	No DATA	20.4	20.9	20.0		20.4	0.58	1.5	0.5	20.4	0.58	1.5	0.5	3	AL	
8FHLYP	19.7	19.7	19.7	19.6		19.7	-0.40	1.3	0.1	L 19.7	-0.40	1.3	0.1	L 4	LA	
8QX9CW	20.6	20.3	20.6	20.7		20.6	0.72	1.2	0.2	20.6	0.72	1.2	0.2	4	LA	
9CU8BF	19.0	18.3	18.8	19.0		18.8	-1.56	1.3	0.3	18.8	-1.56	1.3	0.3	4	LZ	
9CU8BF_AL	31.9	XL 35.2	XL 32.2	XL 32.4	XL	32.9	16.34	X 0.0	1.5	H	32.9	16.34	X 0.0	1.5	H 4	AL
9VRP3V	20.1	20.4	20.7	20.4		20.4	0.52	1.5	0.2	20.4	0.52	1.5	0.2	4	LY	
A6U8DX_AL	20.6	20.4	20.9	21.0		20.7	0.92	1.2	0.3	20.7	0.92	1.2	0.3	4	AL	
AZEYMD	20.3	L 20.0	L 20.3	L 20.0	L	20.2	0.23	0.0	0.2	20.2	0.23	0.0	0.2	4	LH	
BQ4W2D	20.1	L 20.9	L 20.4	L	No DATA	20.5	0.59	0.6	0.4	20.5	0.59	0.6	0.4	3	LZ	
CE6HEL	21.7	H 20.8	21.1	21.1		21.2	1.51	2.7	0.3	21.2	1.51	2.7	0.3	4	LZ	
DB6PYV_AL	23.8	X 24.4	X 23.3	X 23.2	X	23.7	4.66	X 1.5	0.5	23.7	4.66	X 1.5	0.5	4	AL	
DL2VRU	20.4	20.2	20.0	20.0		20.2	0.24	1.6	0.2	20.2	0.24	1.6	0.2	4	LU	
DNCHQ8	20.1	19.7	20.0	20.0		19.9	-0.07	1.3	0.2	19.9	-0.07	1.3	0.2	4	LU	
DRBUL8_AL	19.5	20.3	19.3	20.3		19.9	-0.15	1.4	0.5	19.9	-0.15	1.4	0.5	4	AL	
DXEXDR	22.3	* 20.9	21.8	* 21.8		21.7	2.16	* 1.4	0.6	21.7	2.16	* 1.4	0.6	4	LH	
DZJQ4J	20.9	L 19.8	20.4	L 19.2	L	20.1	0.11	1.1	0.7	20.1	0.11	1.1	0.7	4	LA	
EKA2QJ	19.0	L 19.9	18.1	*L 18.4	L	18.9	-1.43	0.8	0.8	18.9	-1.43	0.8	0.8	4	LZ	
F4X3W7	20.7	20.5	19.2	19.5		20.0	0.00	1.5	0.7	20.0	0.00	1.5	0.7	4	LA	
FBDJR2	19.5	19.2	L 20.2	19.9	L	19.7	-0.37	1.0	0.4	19.7	-0.37	1.0	0.4	4	LU	
FZU7D3	21.0	20.3	L 19.7	L 25.5	X	21.6	2.07	* 0.9	2.6	H	21.6	2.07	* 0.9	2.6	H 4	LA
GVFQLQ	20.1	20.4	20.2	20.0		20.2	0.21	1.2	0.2	20.2	0.21	1.2	0.2	4	LH	
JR7MJD	19.9	20.8	19.8	20.2	L	20.2	0.25	1.3	0.5	20.2	0.25	1.3	0.5	4	LH	
KH2URX	23.3	X 21.0	20.6	19.3		21.1	1.36	1.7	1.7	H	21.1	1.36	1.7	1.7	H 4	LH
KJB6KV	20.4	19.4	No DATA	20.6	H	20.1	0.15	1.7	0.7	20.1	0.15	1.7	0.7	3	LU	
LHU8RV	19.8	19.5	20.1	20.2		19.9	-0.11	1.5	0.3	19.9	-0.11	1.5	0.3	4	LH	
LLVBHX	20.3	20.6	19.5	20.4		20.2	0.26	1.4	0.5	20.2	0.26	1.4	0.5	4	LA	
M26JXR_AL	19.7	19.7	19.7	20.3		19.9	-0.15	1.3	0.3	19.9	-0.15	1.3	0.3	4	AL	
M9QCAQ	19.3	21.5	20.9	21.4		20.8	0.98	1.5	1.0	20.8	0.98	1.5	1.0	4	LA	



**Containerboard Interlaboratory Testing Program**  
 Analysis 225  
**STFI, 31 lb Linerboard - 31K1**  
 TAPPI Official Test Method T826

**Report #659**  
**August 2024**

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
MCPQWG_AI	20.0	20.2	19.0	19.5	19.7	-0.40	1.4	0.5	19.7	-0.40	1.4	0.5	4	XX
MF7T4L	19.8	19.6	20.0	No DATA	19.8	-0.20	1.5	0.2	19.8	-0.20	1.5	0.2	3	TT
NZCNBH	19.4	19.0 L	18.7 L	19.1	19.0	-1.22	0.8	0.3	19.0	-1.22	0.8	0.3	4	XX
P474ZH	19.7	20.9	20.9	20.9	20.6	0.77	1.5	0.6	20.6	0.77	1.5	0.6	4	LH
P7TJPR	19.8	20.2	19.9	No DATA	19.9	-0.06	1.3	0.2	19.9	-0.06	1.3	0.2	3	LU
P7TJPR_AL	20.1	20.0	18.8	No DATA	19.6	-0.47	1.4	0.7	19.6	-0.47	1.4	0.7	3	AL
PMHTA9_AL	17.8 *L	18.6	19.3	19.1	18.7	-1.64	1.5	0.6	18.7	-1.64	1.5	0.6	4	XX
QCD4AJ_AL	72.0 XL	75.6 XL	67.4 XL	71.7 XL	71.7	65.30 X	0.0	3.3 H	71.7	65.30 X	0.0	3.3 H	4	AL
QVAQEM	20.3	19.3	19.9	19.8	19.8	-0.23	1.4	0.4	19.8	-0.23	1.4	0.4	4	LU
RZFGJE_AL	19.4	19.2 L	19.1	19.2	19.2	-0.96	1.2	0.1	19.2	-0.96	1.2	0.1	4	AL
TA26QL	19.9	20.0	20.8	20.2	20.2	0.30	1.6	0.4	20.2	0.30	1.6	0.4	4	LU
TC8T4Q	21.0	20.3	21.1	20.7	20.8	1.01	1.3	0.4	20.8	1.01	1.3	0.4	4	XX
TD3B7R	19.4	19.3	19.5	19.5	19.4	-0.71	1.2	0.1 L	19.4	-0.71	1.2	0.1 L	4	XX
TWFTEC	21.5	20.9	20.7	21.0	21.0	1.34	1.5	0.4	21.0	1.34	1.5	0.4	4	LH
U46Z92	19.7 L	20.3 L	19.7 L	19.4 L	19.8	-0.27	0.0	0.4	19.8	-0.27	0.0	0.4	4	LW
UPRRAJ_AL	19.5	20.6	20.7 L	22.3 *L	20.7	0.96	0.9	1.2	20.7	0.96	0.9	1.2	4	XX
UQKFTE_AL	19.7	19.9	20.0	21.2	20.2	0.27	1.5	0.7	20.2	0.27	1.5	0.7	4	AL
VDA8N2	20.3	20.2	20.0	20.0	20.1	0.20	1.2	0.2	20.1	0.20	1.2	0.2	4	LW
VTQ37J	21.1	20.3	20.9	No DATA	20.8	0.99	1.5	0.4	20.8	0.99	1.5	0.4	3	LU
W6EPPJ_AL	19.4 L	18.8	19.1 L	18.9	19.0	-1.22	1.1	0.2	19.0	-1.22	1.1	0.2	4	XX
WWKJVH	19.4	19.7 L	19.3	19.6	19.5	-0.62	1.0	0.2	19.5	-0.62	1.0	0.2	4	LW
WXVLGG	20.7 L	19.4	20.2	19.6	20.0	-0.03	1.3	0.6	20.0	-0.03	1.3	0.6	4	LW
X2T3RP	18.3	18.4	19.0	18.1	18.5	-1.93	1.5	0.4	18.5	-1.93	1.5	0.4	4	LU
X2T3RP_AL	19.7	18.8	19.3	19.9	19.4	-0.68	1.2	0.5	19.4	-0.68	1.2	0.5	4	AL
Y7XHF4	21.5 H	22.4 *H	23.5 XH	22.3 *H	22.4	3.08 X	4.7	0.8	22.4	3.08 X	4.7	0.8	4	XX
ZB743F	17.7 *	18.5	18.7	No DATA	18.3	-2.17 *	1.1	0.5	18.3	-2.17 *	1.1	0.5	3	LH
ZB743F_AL	17.7 *	19.7	18.6	No DATA	18.7	-1.67	1.5	1.0	18.7	-1.67	1.5	1.0	3	AL
ZUJMYJ	17.2 X	17.6 *	17.8 *	17.5 *	17.5	-3.11 X	1.4	0.3	17.5	-3.11 X	1.4	0.3	4	XX

Consensus (All Labs) Results													
Wk Mean	19.93	19.96	19.89	20.04	Month Mean	19.99		Grand Mean	19.99				
Avg SDr	1.58	1.38	1.32	1.59	Avg SD	1.36		Avg SD	1.36				
SD btwn Labs	0.92	0.91	0.85	1.02	SD btwn Labs	0.79		SD btwn Labs	0.79				
Labs Incl	57	60	58	51	SD btwn Wks	0.63		SD btwn Wks	0.63				
Labs Excl	5	3	4	4	Labs Incl	58		Labs Incl	58				
Labs not Rcvd	1	0	1	8									





Containerboard Interlaboratory Testing Program  
Analysis 225  
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**Key to Instrument Codes Reported by Participants**

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



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

**Report #659**  
**August 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
4U6PVA	226.1	-0.14	17.27	237.5	0.18	16.05	2	LS
4U6PVA_AL	288.9	1.18	41.37	271.3	0.85	25.03	2	AL
4YMR3F	257.7	0.52	48.68 H	228.1	0.00	41.86	2	EV
62AN7Y	274.9	0.88	22.62	272.2	0.87	3.89	2	LA
6NJY7T	263.7	0.64	28.53	277.3	0.97	19.35	2	EV
6WD3DB_AL	129.4	-2.17 *	14.85	139.8	-1.74	14.68	2	AL
8FHLYP	180.0	-1.11	35.36	166.6	-1.21	18.95	2	EV
8QX9CW	315.7	1.74	40.93	298.2	1.38	24.84	2	LA
9CU8BF	0.3	-4.89 X	0.03 L	94.6	-2.63 *	133.33	2	LA
9CU8BF_AL	196.8	-0.76	41.63	190.7	-0.74	8.74	2	AL
9VRP3V	264.4	0.66	25.18	262.5	0.68	2.69	2	LS
A6U8DX_AL	257.0	0.50	26.57	263.6	0.70	9.30	2	AL
DB6PYV_AL	184.1	-1.03	25.94	190.4	-0.74	8.94	2	AL
DKUFJ3	296.1	1.33	37.44	300.6	1.43	6.29	2	LS
DRBUL8_AL	257.2	0.51	31.69	262.7	0.68	7.75	2	AL
DZJQ4J	183.6	-1.04	21.08	225.9	-0.04	59.86	2	LA
EKA2QJ	225.4	-0.16	15.59	224.4	-0.07	1.48	2	LS
F4X3W7	270.0	0.78	41.11	271.7	0.86	2.42	2	LA
FBDJR2	189.7	-0.91	19.60	189.1	-0.77	0.92	2	EV
KH2URX	249.9	0.36	27.06	251.0	0.45	1.48	2	LS
M9QCAQ	153.2	-1.68	11.32 L	160.9	-1.33	10.82	2	LA
P7TJPR_AL	162.2	-1.49	16.92	162.7	-1.29	0.71	2	AL
PMHTA9_AL	231.0	-0.04	28.55	201.3	-0.53	41.96	2	AL
QCD4AJ_AL	30.0	-4.26 X	11.13 L	30.0	-3.91 X	0.00	1	XX
QVAQEM	281.3	1.01	22.78	285.3	1.13	5.77	2	EV
RZFGJE_AL	226.8	-0.13	31.05	231.8	0.07	7.12	2	AL
TWFTEC	256.6	0.50	23.48	256.6	0.56	0.01	2	EV
UPRRAJ_AL	149.1	-1.76	20.06	158.7	-1.37	13.51	2	AL
UQKFTE_AL	292.9	1.26	36.26	283.2	1.09	13.74	2	AL
WXVLGG	251.1	0.38	22.40	255.8	0.55	6.59	2	LA
X2T3RP	234.5	0.03	28.57	201.4	-0.53	46.81	2	XX
X2T3RP_AL	232.9	0.00	24.42	240.7	0.25	10.96	2	AL
ZB743F_AL	239.6	0.14	38.75	242.9	0.29	4.60	2	AL



Containerboard Interlaboratory Testing Program  
Analysis 228  
**Roughness - Stylus Method, 42 lb Linerboard - 42L1**  
TAPPI Official Test Method T575

**Report #659**  
**August 2024**

Consensus (All Labs) Results			
Month Mean	232.96	Grand Mean	228.09
Avg SD	29.45	Avg SD Months	30.95
SD btwn Labs	47.62	SD btwn Labs	50.68
Labs Incl	31	Labs Incl	32

**Key to Instrument Codes Reported by Participants**

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



**Containerboard Interlaboratory Testing Program**  
 Analysis 229  
**Roughness - Sheffield Method, 42 lb Linerboard - 42L1**  
 TAPPI Official Test Method T538

**Report #659**  
**August 2024**

WebCode	Monthly Results				Cumulative Results				
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
4U6PVA_AL	422.3	4.43 X	3.55 L		424.0	2.46 *	2.35	2	AL
8FD62Q_AL	382.5	0.11	6.47		382.1	0.03	0.57	2	AL
9CU8BF_AL	372.8	-0.94	6.14		372.3	-0.55	0.78	2	AL
9VRP3V	403.2	2.36 *	5.90		403.2	1.26	0.03	2	XX
DNCHQ8	387.0	0.60	4.24		387.0	0.31	0.00	2	XX
DRBUL8_AL	387.4	0.64	16.66 H		383.6	0.11	5.37	2	AL
FZU7D3	379.9	-0.17	3.78 L		384.5	0.16	6.43	2	XX
LLFRXZ	334.4	-5.11 X	4.86		341.4	-2.34 *	9.95	2	TS
M26JXR_AL	378.1	-0.37	15.20 H		380.8	-0.05	3.75	2	AL
MCPQWG_AL	382.8	0.15	11.43		382.8	0.07	0.00	1	XX
QCD4AJ_AL	444.9	6.87 X	1,081.93 H		444.9	3.68 X	0.00	1	XX
RZFGJE_AL	370.5	-1.19	2.59 L		369.5	-0.71	1.41	2	AL
UPRAJ_AL	374.3	-0.78	7.62		375.3	-0.37	1.41	2	XX
UQKFTE_AL	389.0	0.82	8.35		390.7	0.53	2.40	2	AL
W6EPPJ_AL	373.5	-0.86	6.15		377.0	-0.27	4.88	2	XX
X2T3RP_AL	389.2	0.84	4.85		381.9	0.01	10.39	2	AL
ZB743F_AL	370.4	-1.20	6.02		370.1	-0.67	0.42	2	AL

Consensus (All Labs) Results			
Month Mean	381.48	Grand Mean	381.63
Avg SD	8.53	Avg SD Months	4.87
SD btwn Labs	9.22	SD btwn Labs	17.19
Labs Incd	14	Labs Incd	16

**Key to Instrument Codes Reported by Participants**

- AL L & W Autoline 400
- XX Instrument make/model not specified by lab
- TS TMI Monitor/Smoothness



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

**Report #659**  
**August 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
4U6PVA	138.2	-0.25	21.82 H	134.5	-0.41	5.26	2	TM
4YMR3F	158.2	0.83	6.87	162.7	1.28	6.36	2	HZ
6M3ZRB	128.0	-0.80	7.62	129.2	-0.73	1.70	2	TM
6WD3DB	134.6	-0.45	12.54	132.2	-0.55	3.39	2	TM
7VFCJ2	146.4	0.19	4.39	141.7	0.02	6.65	2	HY
8FD62Q	139.5	-0.18	5.54	140.9	-0.03	1.98	2	TM
8FHLYP	131.0	-0.64	2.35	132.6	-0.53	2.26	2	TM
DKUFJ3	153.8	0.59	5.40	150.6	0.55	4.53	2	HY
DNCHQ8	165.0	1.19	6.65	166.7	1.52	2.40	2	HY
FBDJR2	129.6	-0.72	7.16	127.7	-0.82	2.69	2	TM
FZU7D3	104.7	-2.06 *	5.17	109.9	-1.89 *	7.31	2	SC
LLVBHX	156.6	0.74	5.68	159.5	1.09	4.10	2	HZ
M26JXR	159.2	0.88	5.36	155.2	0.83	5.66	2	LZ
MF7T4L	124.1	-1.01	8.24	124.7	-1.01	0.81	2	TM
QVAQEM	144.0	0.06	6.40	139.7	-0.10	6.08	2	TM
RZFGJE	128.8	-0.76	6.14	121.8	-1.18	9.90	2	TM
TWFTEC	148.0	0.28	7.38	150.0	0.52	2.83	2	TM
W6EPPJ	156.6	0.74	9.10	155.0	0.82	2.26	2	HY
WXVLGG	187.4	2.41 *	15.84	169.3	1.68	25.60	2	HY
X2T3RP	124.0	-1.02	4.30	123.8	-1.06	0.28	2	TM

Consensus (All Labs) Results			
Month Mean	142.89	Grand Mean	141.38
Avg SD	8.83	Avg SD Months	7.33
SD btwn Labs	18.51	SD btwn Labs	16.62
Labs Incl	20	Labs Incl	20

**Consensus By Method**

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	139.14	15.12	3.74	15
Modified Scott Bond Mechanics	170.52	14.90	27.63	3



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

**Report #659**  
**August 2024**

**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		



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

**Report #659**  
**August 2024**

WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SD	Mean	CPV	SD Months	Months
4U6PVA	25.2	-0.97	2.49	24.3	-0.95	1.27	2
4YMR3F	26.1	-0.65	2.07	21.4	-1.84	6.65	2
6NJY7T	27.1	-0.29	4.28	24.7	-0.84	3.46	2
6WD3DB	30.7	0.98	3.17	30.4	0.91	0.42	2
7VFCJ2	28.2	0.10	2.68	27.4	0.01	1.08	2
8QX9CW	26.5	-0.50	1.44	26.7	-0.23	0.20	2
9VRP3V	33.1	1.85	1.78	33.7	1.91	0.78	2
AZEYMD	24.0	-1.40	3.48	22.9	-1.40	1.63	2
CTQXHK	28.8	0.31	1.64	28.3	0.27	0.71	2
CWPAEK	28.4	0.17	1.52	29.0	0.49	0.85	2
DB6PYV	27.5	-0.15	2.18	26.5	-0.28	1.41	2
DKUFJ3	29.4	0.53	1.14	29.6	0.67	0.28	2
DNCHQ8	26.8	-0.41	1.24	26.0	-0.42	1.07	2
DRBUL8	27.2	-0.25	2.32	27.5	0.03	0.38	2
EKA2QJ	29.4	0.53	2.30	29.6	0.67	0.28	2
EY7D29	33.6	2.02 *	1.52	32.2	1.47	1.98	2
FBDJR2	32.4	1.60	2.97	34.2	2.08 *	2.55	2
FZU7D3	26.4	-0.54	1.34	24.8	-0.80	2.26	2
KH2URX	21.8	-2.18 *	1.64	22.2	-1.60	0.57	2
M26JXR	22.3	-2.01 *	0.67	21.9	-1.69	0.57	2
P7TJPR	27.4	-0.19	2.07	29.1	0.52	2.40	2
PMHTA9	28.8	0.31	3.49	25.2	-0.68	5.09	2
QCD4AJ	24.9	-1.08	0.82	24.9	-0.77	0.00	1
QDMBBQ	26.0	-0.69	2.45	25.2	-0.68	1.13	2
QVAQEM	27.6	-0.12	2.70	28.5	0.34	1.27	2
RZFGJE	31.2	1.17	2.05	30.3	0.89	1.27	2
TWFTEC	31.2	1.17	0.84	31.2	1.16	0.03	2
UQKFTE	29.2	0.45	4.55	28.4	0.30	1.13	2
VTQ37J	25.6	-0.83	0.55 L	26.1	-0.40	0.71	2
W6EPPJ	28.2	0.10	4.71 H	27.3	-0.03	1.27	2
WXVLGG	30.6	0.95	2.30	31.0	1.10	0.57	2
X2T3RP	28.0	0.03	2.45	26.7	-0.22	1.84	2

Consensus (All Labs) Results			
Month Mean	27.93	Grand Mean	27.41
Avg SD	2.45	Avg SD Months	2.02
SD btwn Labs	2.80	SD btwn Labs	3.26
Labs Includ	32	Labs Includ	32



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

**Report #659**  
**August 2024**

**Key to Instrument Codes Reported by Participants**

ZZ Instruments No Longer Tracked





**Containerboard Interlaboratory Testing Program**  
Analysis 237

**Report #659**  
**August 2024**

**Air Resistance, 42 lb Linerboard - 42L1**

TAPPI Official Test Method T460

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD	Months	Inst
4U6PVA_AL	33.6	-0.12	2.29	33.3	-0.41	0.45	2	AL
4YMR3F	34.8	0.53	1.59	33.9	-0.09	1.32	2	LP
62AN7Y	33.1	-0.40	2.71	33.9	-0.10	1.02	2	LA
6WD3DB_AL	34.5	0.37	3.00	34.3	0.18	0.28	2	AL
8FD62Q_AL	33.8	-0.02	2.42	34.0	-0.01	0.26	2	AL
8QX9CW	29.1	-2.64 *	2.80	30.8	-1.92	2.35	2	LA
98GL29	33.5	-0.19	1.58	36.2	1.26	3.75	2	XX
9CU8BF_AL	33.3	-0.30	3.22	33.2	-0.49	0.17	2	XX
9VRP3V	33.3	-0.30	4.31 H	33.7	-0.17	0.61	2	GA
A6U8DX_AL	35.2	0.78	1.63	34.8	0.48	0.58	2	AL
CWPAEK	30.9	-1.64	2.86	31.3	-1.58	0.61	2	TD
DB6PYV_AL	37.8	2.19 *	2.22	38.5	2.65 *	1.04	2	AL
DKUFJ3	32.8	-0.60	1.00 L	33.0	-0.61	0.30	2	LP
DNCHQ8	33.9	0.02	3.33	33.8	-0.11	0.08	2	TP
DRBUL8_AL	30.8	-1.72	3.21	30.4	-2.15 *	0.54	2	AL
DZJQ4J	33.0	-0.47	1.43	33.6	-0.27	0.77	2	LA
EKA2QJ	24.2	-5.36 X	2.53	22.5	-6.79 X	2.40	2	XX
EV6AB8	35.9	1.14	4.56 H	34.8	0.43	1.63	2	GG
F4X3W7	32.0	-1.00	2.63	32.4	-0.93	0.56	2	LA
FBDJR2_AL	35.6	0.96	3.26	35.2	0.71	0.48	2	AL
KH2URX	31.1	-1.53	2.80	31.0	-1.78	0.12	2	TD
KJB6KV_AL	33.8	-0.02	2.12	33.5	-0.28	0.37	2	AL
KUEWEW	34.8	0.51	1.09 L	35.0	0.58	0.34	2	LP
LHU8RV	37.5	2.03 *	3.03	36.9	1.67	0.92	2	XX
M26JXR_AL	35.5	0.92	2.54	35.3	0.75	0.31	2	AL
M9QCAQ	31.4	-1.37	1.46	32.1	-1.12	1.03	2	LA
MCPQWG_AL	32.7	-0.63	1.74	32.7	-0.76	0.00	1	XX
MF7T4L	35.5	0.90	2.58	33.5	-0.32	2.80	2	GA
P7TJPR	34.6	0.41	2.38	34.8	0.44	0.25	2	GG
P7TJPR_AL	33.4	-0.25	2.32	33.6	-0.25	0.28	2	AL
PMHTA9_AL	31.9	-1.08	2.43	32.2	-1.07	0.41	2	AL
QCD4AJ_AL	110.7	42.73 X	7.91 H	110.7	45.24 X	0.00	1	XX
QVAQEM	39.8	3.33 X	2.72	36.8	1.64	4.31	2	GA
RZFGJE_AL	33.6	-0.12	2.22	34.6	0.35	1.37	2	AL
TWFTEC	34.0	0.07	1.60	33.6	-0.26	0.57	2	LP
UF32PC	34.6	0.42	1.32	34.2	0.12	0.56	2	XX
UPRAJ_AL	34.7	0.47	2.19	35.2	0.70	0.71	2	XX
UQKFTE_AL	33.6	-0.12	3.06	33.6	-0.25	0.05	2	AL
VTQ37J	35.8	1.10	2.29	35.6	0.93	0.33	2	GG



**Containerboard Interlaboratory Testing Program**  
Analysis 237

**Report #659**  
**August 2024**

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

TAPPI Official Test Method T460

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
W6EPPJ	33.8	-0.02	2.66	34.4	0.22	0.81	2	TP
W6EPPJ_AL	33.4	-0.27	1.90	33.3	-0.45	0.15	2	XX
WXVLGG	34.0	0.08	1.56	33.9	-0.07	0.14	2	LP
X2T3RP	34.4	0.30	2.29	34.1	0.02	0.48	2	LP
X2T3RP_AL	38.0	2.30 *	3.04	37.7	2.15 *	0.46	2	AL
ZB743F_AL	33.0	-0.46	2.40	35.6	0.92	3.61	2	AL
ZQ3KRE	33.5	-0.22	1.66	32.8	-0.74	0.98	2	LP

Consensus (All Labs) Results				
Month Mean	33.85		Grand Mean	34.02
Avg SD	2.51		Avg SD Months	1.33
SD btwn Labs	1.80		SD btwn Labs	1.70
Labs Incd	43		Labs Incd	44

**Key to Instrument Codes Reported by Participants**

- |           |   |           |   |
|-----------|---|-----------|---|
| <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  
**Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13**  
 TAPPI Official Test Method T809

**Report #659**  
**August 2024**

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
4K46V3	56.8	60.7	60.1	57.7	58.8	0.28	4.6	1.9	58.8	0.47	4.8	1.8	14	LD
4LV2HB	56.3	58.2	59.0	56.6	57.5	-0.12	3.5	1.3	56.7	-0.41	3.5	1.3	16	LD
4YMR3F	52.5 H	53.4	53.7	51.7	52.8	-1.53	4.5	0.9	55.3	-0.95	4.2	2.2	16	LZ
6NJY7T	54.7	58.2	55.3	56.9	56.3	-0.49	3.2	1.6	54.5	-1.28	3.7	2.1	16	EN
8ADHDW	60.9	61.0	59.9	61.4	60.8	0.88	3.4	0.6	58.2	0.22	2.7	2.0	12	TH
8FHLYP	65.0 *	59.2 L	61.1	61.4	61.7	1.14	3.4	2.4	60.3	1.04	3.1	1.8	16	LC
8QX9CW	55.1	50.7 H	50.7 *H	49.7 *H	51.6	-1.91	9.9	2.4	54.1	-1.43	7.5	2.7	16	MB
9CU8BF	53.8	59.3	59.5	56.2	57.2	-0.21	4.0	2.7	56.0	-0.66	3.7	2.0	16	LD
9VRP3V	55.4	60.1	56.9	56.8	57.3	-0.18	4.4	2.0	56.9	-0.33	3.6	2.0	16	LZ
AMPZYW	63.3	64.8 H	63.7	69.0 X	65.2	2.21 *	6.5	2.6	65.9	3.29 X	5.4	1.9	12	TX
AX7JF8	62.7	62.5	63.5	62.3	62.8	1.47	3.1	0.5	61.9	1.68	2.8	1.0	16	LC
AZEYMD	58.9	61.8	62.3	58.5	60.4	0.75	3.4	1.9	60.4	1.09	3.3	1.7	16	LD
BHP946	60.9 L	60.3 L	60.8 L	60.7 L	60.7	0.84	1.4	0.3 L	60.9	1.29	1.9	0.9	12	LD
BQ4W2D	55.5 L	56.5 L	56.4 L	No DATA	56.1	-0.53	1.3	0.5	57.3	-0.15	1.1	0.9	14	XX
CE6HEL	61.9	55.4	56.6	59.7 H	58.4	0.16	4.5	2.9	59.1	0.56	4.1	2.9	16	LD
CWPAEK	55.1	58.6	56.2	58.8	57.2	-0.21	3.7	1.8	56.9	-0.30	3.9	1.5	16	LZ
DG72UT	57.3 L	57.6 L	57.4 L	57.5 L	57.4	-0.14	0.6	0.1 L	58.0	0.12	0.6	0.4 L	16	LD
DKUFJ3	No DATA	No DATA	No DATA	57.6	57.6	-0.09	2.3	0.0	57.5	-0.08	2.3	1.4	10	LD
DNCHQ8	59.0	55.9	55.6	58.4	57.2	-0.21	3.2	1.7	57.0	-0.26	3.7	4.3 H	16	LC
DXEXDR	59.2	60.0	60.8	61.9	60.5	0.78	3.4	1.2	60.0	0.94	3.4	1.2	12	LD
DZJQ4J	57.6	66.3 *	65.5 *	66.0 *H	63.8	1.79	5.2	4.2 H	61.9	1.68	5.1	4.0 H	16	TU
F2PPF4	58.8	58.8	58.4 L	59.0	58.7	0.25	1.8	0.3 L	57.9	0.07	1.7	1.0	12	MB
GVFQLQ	54.2	56.7	52.8	53.3	54.3	-1.09	3.4	1.7	53.9	-1.53	3.6	1.5	16	LD
JR7MJD	63.1 H	65.2 *	60.8	65.6 *	63.7	1.74	5.1	2.2	60.6	1.19	4.6	2.6	16	LD
KJB6KV	60.4	No DATA	59.8	56.8	59.0	0.33	3.3	1.9	60.7	1.22	4.5	2.1	10	LC
KUEWEW	59.3	55.5	59.7	56.8	57.9	-0.01	3.2	2.0	57.5	-0.08	3.3	1.6	16	LD
LLVBHX	55.5	55.1	55.4 L	55.8	55.5	-0.74	2.8	0.3 L	55.5	-0.89	2.8	0.6	16	LD
M26JXR	52.4	53.0	55.1	53.2	53.4	-1.34	3.1	1.2	53.0	-1.89	2.9	1.1	16	LD
P474ZH	55.7	56.9	56.8	56.4	56.4	-0.44	2.7	0.5	56.5	-0.48	2.8	0.9	16	EM
PMHTA9	58.0 H	57.7	59.7	58.5	58.4	0.16	4.9	0.9	55.8	-0.75	3.8	2.1	16	LZ
QVAQEM	56.1	56.7	56.1	57.6	56.6	-0.39	2.9	0.7	56.0	-0.67	3.3	1.7	16	LD
RDJ8XR	58.3	56.9	57.5	56.8	57.4	-0.16	4.1	0.7	58.1	0.17	3.4	1.1	16	LD
RZFGJE	53.6	57.6	56.7	56.5	56.1	-0.54	3.0	1.7	56.4	-0.51	3.7	1.9	16	LD
TA26QL	60.4	57.5	60.6	59.8	59.6	0.51	3.8	1.4	59.6	0.79	4.3	2.0	16	LD
TD3B7R	58.1 L	59.8 L	58.9 L	61.9 L	59.7	0.53	0.7	1.6	60.2	1.01	0.8	1.4	16	XX



**Containerboard Interlaboratory Testing Program**  
Analysis 240

**Report #659**  
**August 2024**

**Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13**

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	
U46Z92	58.8	55.7	56.7	57.9	57.3	-0.19	3.1	1.4	57.8	0.05	3.4	1.2	16	LZ
U84C7M	62.1 L	62.0	65.0	62.6	62.9	1.51	2.7	1.4	61.7	1.61	2.2	1.1	16	TB
VDA8N2	58.5	58.2	60.3	59.3 L	59.1	0.35	3.1	0.9	58.9	0.50	4.1	2.1	16	LD
VW6ZBK	46.7 X	48.7 *H	49.6 *	44.8 XH	47.4	-3.16 X	5.9	2.2	43.7	-5.61 X	5.3	4.7 H	8	TC
W6EPPJ	53.5	52.4	54.8	54.9	53.9	-1.21	3.5	1.2	56.2	-0.58	3.4	2.2	16	LD
WXVLGG	58.7	62.4	58.4	59.7	59.8	0.57	4.2	1.8	59.1	0.56	4.2	1.6	16	XX
WYPAZC	61.6	58.2	61.6	62.7	61.0	0.94	3.8	1.9	60.1	0.98	4.1	2.0	16	LD
X2T3RP	52.7	52.3	53.0	52.6	52.7	-1.58	3.9	0.3 L	54.5	-1.29	4.6	1.5	16	LD
YBFKMA	58.7	59.5	58.9	58.2	58.8	0.28	2.8	0.5	59.8	0.86	3.4	2.3	16	LD
YWTDNM	52.7	52.6	51.6	52.1	52.2	-1.71	4.5	0.5	51.4	-2.53 *	4.3	1.7	16	TH
ZQ3KRE	55.3	57.9	58.9	57.5	57.4	-0.14	2.8	1.5	58.1	0.15	2.8	1.3	16	LD
ZUJMYJ	50.8 *L	50.0 *L	50.0 *L	50.1 *L	50.2	-2.31 *	1.3	0.4	54.6	-1.22	1.2	3.7	12	TU

Consensus (All Labs) Results									
Wk Mean	57.53	57.72	57.87	57.84	Month Mean	57.89		Grand Mean	57.68
Avg SDr	3.67	4.02	3.88	3.76	Avg SD	3.78		Avg SD	3.59
SD btwn Labs	3.39	3.87	3.72	3.63	SD btwn Labs	3.31		SD btwn Labs	2.49
Labs Incd	45	45	46	44	SD btwn Wks	1.63		SD btwn Wks	1.96
Labs Excl	1	0	0	2	Labs Incd	46		Labs Incd	45
Labs not Rcvd	1	2	1	1					

**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
TB	TMI Monitor/Compression Tester, 17-70	TC	TMI Monitor/Compression Tester, 17-37
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
TX	TMI Crush Tester (model not specified)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program  
Analysis 250

Report #659  
August 2024

Fluted Edge Crush Strength (FCF), 26 lb Corrugating Medium - CM13

TAPPI Official Test Method T843

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	
98GL29	65.1 L	66.0	65.6	64.4 L	65.3	-0.65	1.5	0.7	65.4	-0.64	1.6	1.1	16	LZ
9CU8BF	62.6	61.9 H	60.3 *	60.3 *	61.3	-2.02 *	4.7	1.2	63.3	-1.46	3.8	1.9	16	XX
BHP946	69.1	69.8	71.1	71.1	70.3	1.08	2.0	1.0	70.8	1.41	2.2	0.9	12	LD
BQ4W2D	65.6 L	64.9 L	64.7 L	NO DATA	65.1	-0.72	1.2	0.5	64.6	-0.95	1.0	0.8	14	XX
DNCHQ8	69.1	68.8	69.0	68.4	68.8	0.57	2.8	0.3	68.6	0.57	3.1	1.7	16	LC
F2PPF4	65.4	65.6	66.0	65.9	65.7	-0.50	1.7	0.3	65.8	-0.48	1.7	0.4 L	12	MB
KJB6KV	67.4	NO DATA	68.1	65.1	66.9	-0.10	3.6	1.6	69.8	1.04	3.9	2.7	10	LC
KUEWEW	65.2	68.3	67.8	66.1	66.8	-0.11	3.0	1.5	66.4	-0.26	3.5	1.9	16	LD
M26JXR	67.2	65.9	66.6	67.0	66.7	-0.17	3.5	0.6	66.9	-0.05	3.3	1.3	16	LD
PMHTA9	57.4 *H	63.3	63.8	64.9	62.3	-1.66	4.8	3.4 H	61.5	-2.16 *	4.3	3.3	16	LZ
RZFGJE	69.7	68.5	68.2	68.5	68.7	0.54	3.0	0.7	67.6	0.20	3.5	1.7	16	LD
TD3B7R	70.0 L	71.6 L	70.9 L	72.4 L	71.2	1.40	0.9	1.0	70.7	1.40	0.9	1.2	16	XX
U46Z92	66.6	63.2	64.6	64.8	64.8	-0.82	3.5	1.4	65.5	-0.61	3.9	1.8	16	LZ
VDA8N2	68.4	66.8	67.6 H	66.2 H	67.2	0.02	5.2	0.9	67.2	0.03	6.2	2.5	16	LD
W6EPPJ	71.4	71.7	69.7	70.5	70.8	1.26	3.1	0.9	67.7	0.22	4.7	2.5	16	LD
WXVLGG	68.0	68.9	70.7	68.9	69.1	0.68	3.7	1.1	68.4	0.50	3.9	1.2	16	XX
X2T3RP	56.6 *H	56.9 XH	56.6 XH	56.3 XH	56.6	-3.63 X	7.5	0.2	56.5	-4.06 X	5.7	1.0	16	LD
ZQ3KRE	70.9	71.3	69.8	70.5	70.6	1.19	2.5	0.6	70.3	1.23	3.0	1.2	16	LD

Consensus (All Labs) Results									
Wk Mean	66.43	67.27	67.31	67.18	Month Mean	67.15	Grand Mean	67.09	
Avg SDr	3.39	3.24	3.27	3.46	Avg SD	3.22	Avg SD	3.49	
SD btwn Labs	4.12	3.06	2.92	3.13	SD btwn Labs	2.91	SD btwn Labs	2.60	
Labs Incl	18	16	17	16	SD btwn Wks	1.24	SD btwn Wks	1.80	
Labs Excl	0	1	1	1	Labs Incl	17	Labs Incl	17	
Labs not Rcvd	0	1	0	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 - CM13**  
 TAPPI Official Test Method T822

**Report #659**  
**August 2024**

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	
4K46V3	44.5	44.2	45.7	39.4	43.4	0.94	3.4	2.8	39.9	-0.95	3.3	3.2	14	LD
4LV2HB	44.2	44.6	44.6	45.7	44.8	1.59	3.0	0.6	43.4	1.22	2.5	1.2	16	LC
8ADHDW	36.5 *	36.7	36.1 *	36.7 L	36.5	-2.39 *	1.8	0.3 L	36.0	-3.37 X	2.4	1.6	12	TH
8QX9CW	44.4	43.3	44.8	44.0	44.1	1.27	2.9	0.7	43.2	1.10	3.1	1.3	16	MB
9CU8BF	40.3	40.8	40.8	39.0	40.2	-0.60	3.1	0.9	40.9	-0.31	3.5	1.3	16	LD
9VRP3V	42.7	40.6	40.0	43.3	41.6	0.07	3.1	1.6	40.4	-0.66	3.0	1.8	16	LD
AMPZYW	36.1 *	35.8 *	38.3 H	37.9	37.0	-2.13 *	3.4	1.3	38.3	-1.91 *	3.4	2.0	12	LZ
AX7JF8	42.4	42.5	42.9	43.4	42.8	0.63	3.5	0.4	41.2	-0.12	2.6	1.3	16	XX
AZEYMD	32.0 X	31.2 X	32.3 X	32.1 *	31.9	-4.57 X	3.6	0.5	35.2	-3.82 X	3.7	3.6 H	16	XX
BQ4W2D	42.6 L	42.1 L	43.0 L	No DATA	42.6	0.53	1.0	0.4	42.3	0.55	0.7	0.5	14	XX
CE6HEL	44.4	46.3 H	42.2	33.5 *H	41.6	0.06	4.3	5.7 H	42.9	0.90	4.4	4.4 H	16	LZ
DG72UT	43.9 L	44.0 L	43.9 L	43.8 L	43.9	1.16	0.5	0.1 L	43.8	1.45	0.6	0.3 L	16	LD
DNCHQ8	42.2	40.5	42.6	37.2	40.6	-0.42	3.6	2.5	41.4	0.00	3.5	2.2	16	LC
F2PPF4	41.9	41.8	41.5	41.0	41.6	0.04	1.6	0.4	41.3	-0.11	1.6	0.6	12	MB
JR7MJD	43.6	40.8	43.9	42.1	42.6	0.54	2.7	1.4	42.7	0.75	2.7	2.0	16	LD
KUEWEW	41.1	41.2	42.1	38.1	40.6	-0.41	3.1	1.8	39.8	-1.01	3.4	2.0	16	LD
LHU8RV	42.3	48.5 *	46.0	43.9	45.2	1.78	2.6	2.7	44.7	2.03 *	2.9	1.7	16	LD
LLVBHX	43.3	43.0	43.3	43.8	43.4	0.90	3.1	0.3	43.0	0.96	2.6	1.1	16	LD
M26JXR	41.0	43.8	42.3	43.1	42.5	0.51	2.4	1.2	42.8	0.86	2.6	1.2	16	LD
MCPQWG	40.4	41.8	41.2	41.9 L	41.3	-0.07	1.7	0.6	41.5	0.04	3.1	1.5	16	LD
RDJ8XR	41.5	41.5	41.0	41.3	41.3	-0.08	2.8	0.2 L	41.6	0.12	3.0	0.8	16	LD
U84C7M	42.1 L	41.4	41.9	41.7	41.7	0.13	1.6	0.3 L	40.8	-0.37	2.0	1.0	16	XX
VBMTYR	38.0 H	35.8 *	39.2	36.4	37.4	-1.97 *	4.8	1.5	37.4	-2.49 *	4.8	1.3	16	XX
VT6R6P	40.1	40.9	39.9	39.3	40.1	-0.68	2.1	0.6	40.4	-0.61	2.7	1.5	16	TH
VW6ZBK	23.5 XH	23.7 XH	27.9 XH	28.5 XH	25.9	-7.46 X	8.5	2.7	23.8	-10.86 X	7.3	3.3	8	TC
W6EPPJ	40.8	40.7	42.5	41.1	41.3	-0.09	2.0	0.8	41.3	-0.07	3.1	0.7	16	LD
WXVLGG	41.6	38.6	40.4	42.9	40.9	-0.28	3.7	1.8	41.0	-0.29	3.1	0.9	16	XX
WYPAZC	41.1	39.3	40.7 H	41.7	40.7	-0.38	3.9	1.0	41.2	-0.15	3.7	1.4	16	LD
YBFKMA	40.7	38.8	37.2	41.6	39.6	-0.92	2.6	1.9	39.3	-1.30	2.6	2.1	16	LD
ZQ3KRE	42.8	41.8	38.4	44.2	41.8	0.15	3.3	2.4	41.7	0.19	3.0	1.3	16	LD
ZUJMYJ	41.3 L	41.8 L	41.9 L	41.9 L	41.7	0.11	0.8	0.3 L	41.7	0.16	0.8	0.3 L	12	TU



**Containerboard Interlaboratory Testing Program**  
 Analysis 255  
**Ring Crush (RCT), 26 lb Corrugating Medium - CM13**  
 TAPPI Official Test Method T822

**Report #659**  
**August 2024**

Consensus (All Labs) Results									
Wk Mean	41.65	41.47	41.66	40.75	Month Mean	41.47	Grand Mean	41.44	
Avg SDr	2.91	2.83	2.91	3.01	Avg SD	2.89	Avg SD	2.97	
SD btwn Labs	2.12	2.80	2.40	3.29	SD btwn Labs	2.09	SD btwn Labs	1.63	
Labs Incd	29	29	29	29	SD btwn Wks	1.70	SD btwn Wks	1.69	
Labs Excd	2	2	2	1	Labs Incd	29	Labs Incd	28	
Labs not Rcvd	0	0	0	1					

**Key to Instrument Codes Reported by Participants**

<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>TC</b>	TMI Monitor/Compression Tester, 17-37	<b>TH</b>	TMI Compression Tester, Model 17-76
<b>TU</b>	TMI Universal Crush Tester (TMI K440)	<b>XX</b>	Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 261  
**STFI, 26 lb Corrugating Medium - CM13**  
 TAPPI Official Test Method T826

**Report #659**  
**August 2024**

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	
4LV2HB	13.5	13.9	13.9	13.7	13.7	0.32	1.2	0.2	13.9	0.65	1.1	0.4	16	LH
4U6PVA	15.0 *	14.6	13.6	14.8	14.5	1.63	1.0	0.6	14.4	1.46	1.1	0.4	16	LA
62AN7Y	14.3	14.3	14.2	15.1 *	14.4	1.60	1.0	0.4	14.3	1.32	1.2	0.6	16	LA
8FHLYP	13.6	13.7	13.4	14.2 H	13.7	0.30	1.2	0.3	13.6	0.18	1.0	0.6	12	XX
8QX9CW	14.2	14.2	14.2	14.4 H	14.2	1.21	1.3	0.1	13.9	0.66	1.2	0.6	16	LA
9CU8BF	13.2	12.7	13.5	12.2	12.9	-1.20	1.0	0.6	13.3	-0.46	1.1	0.6	16	LZ
9VRP3V	12.8	14.2	14.3	13.8	13.8	0.41	1.0	0.7	13.6	0.10	1.1	0.4	16	LB
AZEYMD	13.7 L	13.6 L	13.4 L	14.2 L	13.7	0.26	0.0	0.3	13.6	0.22	0.0	0.3	16	LH
BHP946	14.1	13.7 L	13.7	13.8	13.8	0.45	0.8	0.2	13.9	0.72	0.8	0.7	8	LA
BQ4W2D	13.6 L	13.5 L	13.2 L	No DATA	13.4	-0.27	0.4	0.2	13.4	-0.23	0.3	0.1 L	14	LZ
CE6HEL	12.8	12.4 H	14.0 L	14.3	13.4	-0.36	1.4	0.9	12.5	-1.81	1.4	1.0	15	LZ
DKUFJ3	No DATA	No DATA	No DATA	13.2	13.2	-0.65	0.9	0.0	13.2	-0.55	0.9	0.2	10	LH
DL2VRU	13.8	13.5	13.2	13.8	13.6	0.03	1.2	0.3	13.7	0.38	1.1	0.4	16	LU
DNCHQ8	13.2	13.4	13.6	13.5	13.4	-0.30	0.8	0.2	13.5	-0.01	1.0	0.3	16	LU
DZJQ4J	14.1	14.3	14.6	13.7	14.2	1.11	1.0	0.4	14.3	1.27	1.2	0.5	16	LA
EDQT68	12.8	12.8	12.4 L	13.0	12.8	-1.46	0.8	0.3	13.0	-0.83	1.1	0.2	16	TX
EY7D29	12.8	13.1	13.9	13.1	13.2	-0.65	1.0	0.5	13.1	-0.66	1.1	0.7	16	TT
F4X3W7	12.6	13.5	13.8	13.2	13.3	-0.51	0.8	0.5	13.2	-0.58	1.2	0.4	16	LA
JR7MJD	12.8	14.1	14.0	12.8	13.4	-0.23	1.0	0.7	13.7	0.22	1.1	0.5	16	XX
LLVBHX	14.4	14.5	14.2	14.0 H	14.3	1.28	1.4	0.2	13.8	0.45	1.4	0.4	16	XX
M26JXR	14.0	13.4	14.3	14.4 L	14.0	0.86	1.0	0.5	13.9	0.68	0.9	0.4	16	LA
MCPQWG	13.0 L	13.9	15.3 *L	14.5 L	14.2	1.11	0.6	1.0 H	14.5	1.74	1.1	0.6	16	LH
NZCNBH	13.7 H	13.9	13.3	13.7 L	13.7	0.19	1.2	0.2	14.0	0.91	1.2	0.6	12	XX
P474ZH	13.2	13.6	14.5	14.2	13.9	0.57	1.1	0.6	13.3	-0.40	1.1	0.5	16	LH
QVAQEM	13.4	13.6	13.5	13.3	13.5	-0.18	1.1	0.1	13.5	-0.08	1.1	0.4	16	LU
RZFGJE	14.2	12.9	13.5	13.0	13.4	-0.29	1.2	0.6	13.6	0.10	1.2	0.5	16	LA
TD3B7R	12.4	12.4	13.1 H	13.1	12.7	-1.51	1.2	0.4	12.5	-1.71	1.0	0.7	16	XX
VW6ZBK	20.5 XH	21.4 XH	21.4 XH	22.0 X	21.3	13.99 X	1.6	0.6	21.5	13.97 X	1.6	0.6	8	TS
X2T3RP	12.9	13.2 H	12.6 H	13.1	13.0	-1.08	1.7	0.3	12.9	-1.17	1.6	0.5	16	LB
ZUJMYJ	12.5	12.0 *	12.1 *	11.8 *	12.1	-2.63 *	1.0	0.3	12.1	-2.57 *	1.1	0.3	12	XX





**Containerboard Interlaboratory Testing Program**  
 Analysis 261  
**STFI, 26 lb Corrugating Medium - CM13**  
 TAPPI Official Test Method T826

**Report #659**  
**August 2024**

Consensus (All Labs) Results									
Wk Mean	13.45	13.52	13.68	13.63	Month Mean	13.56	Grand Mean	13.52	
Avg SDr	1.00	1.12	1.15	1.06	Avg SD	1.08	Avg SD	1.12	
SD btwn Labs	0.67	0.66	0.68	0.74	SD btwn Labs	0.55	SD btwn Labs	0.57	
Labs Incd	28	28	28	28	SD btwn Wks	0.47	SD btwn Wks	0.51	
Labs Excl'd	1	1	1	1	Labs Incd	29	Labs Incd	29	
Labs not Rcvd	1	1	1	1					

**Key to Instrument Codes Reported by Participants**

<b>LA</b> L&W Autoline <b>LH</b> L&W 282 <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	<b>LB</b> L&W Model 152 <b>LU</b> L&W 52 without moisture correction (was 53) <b>TS</b> TMI Monitor/STFI Compression Tester, 17-33 <b>TX</b> TMI (model not specified)
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