



## Containerboard Interlaboratory Testing Program

Participant Summary Report #653 - February 2024

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[Introduction to the Containerboard Program](#)

[Explanation of Tables and Definitions of Terms](#)

Analysis	Sample	Analysis Name
<a href="#"><u>201</u></a>	<a href="#"><u>BX18</u></a>	<a href="#"><u>Top to Bottom Box Compression Strength, Corrugated Boxes</u></a>
<a href="#"><u>202</u></a>	<a href="#"><u>EC15</u></a>	<a href="#"><u>Edgewise Compressive Strength, by T811, Corrugated Board</u></a>
<a href="#"><u>203</u></a>	<a href="#"><u>EC15</u></a>	<a href="#"><u>Edgewise Compressive Strength by T839, Corrugated Board</u></a>
<a href="#"><u>205</u></a>	<a href="#"><u>42H3</u></a>	<a href="#"><u>Bursting Strength (Mullen), 42 lb Linerboard</u></a>
<a href="#"><u>207</u></a>	<a href="#"><u>35E3</u></a>	<a href="#"><u>Bursting Strength (Mullen), 35 lb Linerboard</u></a>
<a href="#"><u>215</u></a>	<a href="#"><u>42H3</u></a>	<a href="#"><u>Ring Crush, 42 lb Linerboard</u></a>
<a href="#"><u>217</u></a>	<a href="#"><u>35E3</u></a>	<a href="#"><u>Ring Crush, 35 lb Linerboard</u></a>
<a href="#"><u>223</u></a>	<a href="#"><u>42H3</u></a>	<a href="#"><u>STFI, 42 lb Linerboard</u></a>
<a href="#"><u>225</u></a>	<a href="#"><u>35E3</u></a>	<a href="#"><u>STFI, 35 lb Linerboard</u></a>
<a href="#"><u>228</u></a>	<a href="#"><u>42H</u></a>	<a href="#"><u>Roughness - Stylus Method, 42 lb Linerboard</u></a>
<a href="#"><u>229</u></a>	<a href="#"><u>42H3</u></a>	<a href="#"><u>Roughness - Sheffield Method, 42 lb Linerboard</u></a>
<a href="#"><u>231</u></a>	<a href="#"><u>42H</u></a>	<a href="#"><u>Internal Bond, 42 lb Linerboard</u></a>
<a href="#"><u>234</u></a>	<a href="#"><u>42H</u></a>	<a href="#"><u>COF Inclined Plane (Slide Angle), 42 lb Linerboard</u></a>
<a href="#"><u>237</u></a>	<a href="#"><u>42H3</u></a>	<a href="#"><u>Air Resistance, 42 lb Linerboard</u></a>
<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>
<a href="#"><u>261</u></a>	<a href="#"><u>CM13</u></a>	<a href="#"><u>STFI, 26 lb Corrugating Medium</u></a>

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
35# Corrugating Medium	35E3	June 2022 - Current
	35E2	June 2020 - April 2022
42# Corrugating Medium	42H3	October 2023 - Current
	42H1	April 2022 - November 2022
52# Corrugating Medium	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 #653**  
**February 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
3FLVH7	1,057.4	13.83 X	85.89 H	872.6	11.97 X	261.46	2	LG
3KGLNH	617.7	0.94	30.74	612.7	1.24	7.02	2	LO
3NFZAL	561.0	-0.72	23.66	548.2	-1.42	18.10	2	ER
3XNDQP	565.0	-0.60	46.48	572.5	-0.41	10.59	2	EX
4B7MU7	637.8	1.53	16.51	632.0	2.04 *	8.20	2	EX
6VNE79	615.3	0.87	84.23 H	579.4	-0.13	50.83	2	LS
7QCQ7C	578.8	-0.20	19.32	590.3	0.32	16.32	2	LG
8WTHX2	575.9	-0.29	43.48	577.3	-0.22	2.02	2	EX
8ZTR2C	593.8	0.24	69.25	593.8	0.47	0.00	1	ER
9KFH29	618.8	0.97	46.23	607.4	1.03	16.12	2	ET
9QM92T	583.5	-0.06	35.65	598.5	0.66	21.31	2	LG
9TDBA3	604.2	0.54	35.44	594.5	0.49	13.79	2	EX
9Z9BLA	566.2	-0.57	27.60	556.4	-1.08	13.97	2	LG
BQV3Y6	672.7	2.55 *	41.24	680.6	4.05 X	11.19	2	ER
CNN633	583.2	-0.07	20.90	607.6	1.04	34.56	2	LS
FGU734	538.6	-1.38	23.97	552.1	-1.26	19.09	2	ES
FKTHX4	581.2	-0.13	52.18	579.6	-0.12	2.26	2	ER
JBYDHz	613.8	0.82	32.79	604.5	0.91	13.15	2	EX
KAYXJ9	579.9	-0.17	55.42	572.1	-0.43	10.99	2	ER
M2T3D6	596.2	0.31	41.19	597.6	0.62	1.94	2	LM
M3AWFZ	523.0	-1.84	18.64	542.2	-1.66	27.14	2	EX
PVJLUV	603.1	0.51	16.12	594.1	0.48	12.77	2	LM
R7UMKK	519.7	-1.93 *	37.67	530.7	-2.14 *	15.57	2	LL
V9PMWD	560.3	-0.74	51.12	572.1	-0.43	16.67	2	TB
VAJFTW	569.4	-0.48	40.74	583.7	0.05	20.22	2	EX
XNEEVJ	582.3	-0.10	31.93	581.8	-0.03	0.76	2	LG
ZJRGHD	704.2	3.47 X	32.29	705.8	5.09 X	2.26	2	LS

Consensus (All Labs) Results			
Month Mean	585.66	Grand Mean	582.55
Avg SD	41.04	Avg SD Months	18.88
SD btwn Labs	34.12	SD btwn Labs	24.23
Labs Incl	25	Labs Incl	24



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

**Report #653**  
**February 2024**

**Consensus By Method**

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	583.01	35.17	2.65	9
Clip sealing	581.45	26.92	4.21	15
Staple sealing	672.66	0.00	87.00	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 - EC15**  
 TAPPI Official Test Method T811

**Report #653**  
**February 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2LFDGR	48.0	1.26	0.99	49.0	1.56	3.61	4	XX
3XNDQP	44.3	-0.07	1.72	43.7	-0.19	0.78	4	LC
8ZTR2C	43.7	-0.29	3.59	42.7	-0.52	4.39	4	EN
9BTKA3	40.6	-1.39	1.01	40.4	-1.28	1.64	4	TS
9QM92T	47.2	0.99	1.15	46.2	0.63	1.14	4	EX
CCA8VD	149.5	37.80	13.16	155.7	36.65	5.24	4	LD
CNN633	43.3	-0.41	1.55	42.7	-0.52	2.58	4	LD
JBVDHZ	44.3	-0.04	2.60	44.3	0.02	0.77	4	LC
NNM8WN	47.9	1.24	1.51	48.4	1.36	1.28	4	XX
NXVNJN	40.9	-1.29	2.30	41.0	-1.06	1.57	4	TS

Consensus (All Labs) Results				
Month Mean		44.47	Grand Mean	44.26
Avg SD		2.00	Avg SD Months	2.32
SD btwn Labs		2.78	SD btwn Labs	3.04
Labs Incd		9	Labs Incd	9

**Key to Instrument Codes Reported by Participants**

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



**Containerboard Interlaboratory Testing Program**  
 Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated Board - EC15**  
 TAPPI Official Test Method T839

**Report #653**  
**February 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2LFDGR	47.6	0.07	1.39	50.3	0.87	2.98	4	XX
3FLVH7	50.3	0.82	1.49	50.0	0.78	1.84	4	EM
3KGLNH	40.1	-2.04 *	1.85	39.4	-2.17 *	1.46	4	LD
3NFZAL	48.7	0.37	1.40	47.8	0.17	0.94	4	EM
3XNDQP	49.8	0.70	0.81	48.7	0.42	1.19	4	LC
4B7MU7	42.9	-1.24	2.52	43.8	-0.93	1.07	4	CT
6VNE79	46.5	-0.25	2.46	45.7	-0.41	1.57	3	EM
7QCQ7C	53.8	1.80	1.14	52.1	1.35	2.23	4	MK
84CNU9	50.8	0.95	2.87 H	66.7	5.39 X	28.36 H	3	XX
8WTHX2	45.4	-0.55	0.78	45.8	-0.39	0.74	4	TL
8ZTR2C	47.1	-0.08	1.85	46.4	-0.22	1.45	4	EN
9BTKA3	45.0	-0.67	1.24	44.4	-0.77	0.55	4	TS
9KFH29	46.4	-0.26	1.22	48.2	0.29	1.63	3	TD
9QM92T	46.7	-0.19	0.93	45.4	-0.49	2.04	4	LY
AWPMG3	49.4	0.58	1.42	49.4	0.62	0.31 L	4	TH
BQV3Y6	51.4	1.14	1.12	52.5	1.48	1.44	4	LD
BYRV8Y	53.5	1.72	1.52	52.5	1.48	1.58	4	LC
CNN633	45.8	-0.43	2.48	45.1	-0.57	1.59	4	LD
ERHPYX	43.5	-1.09	1.90	46.2	-0.27	2.03	4	TU
FGU734	48.2	0.24	1.27	47.1	-0.03	1.01	4	LD
FKTHX4	47.4	0.00	1.16	46.1	-0.29	1.58	4	LD
JBYDHZ	46.3	-0.31	1.78	45.5	-0.46	3.36	4	LC
KAYXJ9	45.0	-0.67	1.64	43.2	-1.11	1.61	4	LD
KLQJQN	46.8	-0.16	1.94	45.0	-0.60	1.73	4	EM
KVEFNJ	48.8	0.40	1.51	49.7	0.70	1.23	4	LD
M2T3D6	46.3	-0.29	1.42	47.8	0.18	1.20	4	TG
NXVNJN	46.0	-0.37	1.50	46.5	-0.20	2.15	4	TS
PVJLUV	44.6	-0.78	1.75	44.8	-0.65	1.21	4	EM
QT7BGN	45.5	-0.53	2.54	45.7	-0.41	0.33	2	TD
TTKGRX	39.3	-2.25 *	0.96	37.9	-2.57 *	7.86 H	4	XX
UEJ6XK	47.9	0.14	1.95	48.5	0.37	0.85	4	EM
V9PMWD	47.4	0.00	0.82	52.5	1.47	3.55	4	LD
VAJFTW	44.5	-0.79	2.89 H	44.5	-0.75	1.23	4	LD
W72FBV	53.1	1.62	0.87	51.6	1.22	1.08	4	TG
ZJRGHD	55.9	2.40 *	1.37	54.0	1.89	2.31	4	EM





**Containerboard Interlaboratory Testing Program**  
 Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated Board - EC15**  
 TAPPI Official Test Method T839

**Report #653**  
**February 2024**

Consensus (All Labs) Results			
Month Mean	47.36	Grand Mean	47.18
Avg SD	1.69	Avg SD Months	2.16
SD btwn Labs	3.57	SD btwn Labs	3.61
Labs Incl	35	Labs Incl	34

**Key to Instrument Codes Reported by Participants**

CT Con-Ten	EM Emerson 1200 Series
EN Emerson 2200	LC L&W Crush Tester 48
LD L&W Crush Tester 248	LY L&W 830
MK Mark-10 ESM303	TD TMI Digital Crush Tester, Model 17-09
TG TMI Digital Crush Tester, 17-76	TH TMI Monitor/Compression Tester, Model 17-76
TL Tech-Lab Systems Compression	TS TMI Digital Crush Tester, Model 17-56
TU TMI Universal Crush Tester (TMI K440)	XX Instrument make/model not specified by lab



**Containerboard Interlaboratory Testing Program**  
 Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42H3**  
 TAPPI Official Test Method T807

**Report #653**  
**February 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
2BWVPK_AL	120.0	122.7	129.2 *	125.1 *	124.2	1.93	9.5	3.9	126.0	3.09	X11.4	4.0	16	AL
2LFDGR	113.1	115.8	114.4	110.7	113.5	-0.37	6.4	2.1	114.8	-0.04	7.5	2.1	12	LC
3XNDQP	114.9	108.8	112.3	112.4	112.1	-0.67	8.2	2.5	112.0	-0.84	8.0	2.4	16	AH
4B7MU7	117.5	128.0 *	120.5	115.5	120.4	1.10	10.6	5.5	119.4	1.25	9.4	3.9	16	XX
4CEYAM	105.2 *L	105.4 *L	105.5 *L	107.5 L	105.9	-1.99 *	3.2	1.1	110.9	-1.15	2.8	5.3	16	LA
7UVHHE	120.0 L	123.6 L	121.8	122.4	122.0	1.44	5.2	1.5	121.3	1.78	5.7	2.9	13	AH
84CNU9	119.5	116.7	115.7	117.4	117.3	0.45	10.8	1.6	116.4	0.42	10.2	3.6	16	LC
8MQA84_AL	112.7	110.5 H	No DATA	No DATA	111.6	-0.78	15.2	1.6	111.6	-0.95	15.2	1.6	2	AL
8URHVJ_AL	119.7	118.3	123.2 H	115.0	119.1	0.82	12.3	3.4	117.7	0.78	9.4	3.2	13	AL
9PDYD3_AL	113.3	117.7	118.4	112.5	115.5	0.05	10.0	3.0	114.9	-0.01	9.3	3.0	8	AL
9QM92T	123.4	120.3	124.0	120.7	122.1	1.47	8.9	1.9	123.2	2.30 *	9.8	3.0	16	AX
A6XC3E_AL	120.6	116.1	120.5	112.8	117.5	0.49	9.9	3.8	115.0	0.01	10.3	3.3	16	AL
AE9ENE	112.5	113.2	115.7	117.2	114.7	-0.12	9.1	2.2	114.3	-0.19	10.4	2.9	16	LA
BQV3Y6	121.6	114.0	118.9	117.6	118.0	0.60	10.2	3.2	115.2	0.06	7.7	4.4	16	LA
BUGPQR	115.3	119.0 H	118.4	120.9	118.4	0.68	9.6	2.3	116.6	0.46	9.0	4.3	16	LB
CCA8VD	109.5	100.4 X	102.1 *	99.8 X	102.9	-2.63 *	9.4	4.5	103.1	-3.34 X	9.1	3.9	16	LA
CNN633	116.1	119.5	115.8	113.5	116.2	0.21	7.7	2.5	117.1	0.59	8.9	3.0	16	LA
CQE776	112.6	114.0	117.9	113.2	114.4	-0.17	9.4	2.4	113.8	-0.32	9.3	2.9	16	XX
CYNVJ4	115.1	116.0	114.9 L	115.1	115.3	0.01	4.6	0.5 L	115.6	0.17	5.2	0.6 L	16	LA
D6Q4QW_AL	114.3	118.1	110.6	106.9	112.5	-0.58	9.6	4.8	111.9	-0.86	10.5	3.7	16	AL
DZVAQA	113.3	107.7	111.1	108.0	110.0	-1.11	9.4	2.7	111.0	-1.12	8.3	4.0	14	LJ
DZVAQA_AL	122.9	121.0	123.7	117.2	121.2	1.28	11.7	2.9	115.5	0.14	12.4	10.7 H	14	AL
E7GPU8	115.9	115.9	115.3	114.0	115.3	0.01	10.8	0.9	116.7	0.50	9.7	3.4	12	LA
E7GPU8_AL	115.6	116.1	117.3	114.8 H	116.0	0.16	10.8	1.0	116.3	0.36	8.5	2.6	12	AL
FGU734	114.8	115.6	106.7	113.6	112.7	-0.54	10.2	4.1	115.0	0.02	9.5	3.7	16	LA
FKTHX4	112.0	118.1	121.9	119.5	117.9	0.57	9.3	4.2	117.2	0.62	9.2	3.0	16	AH
FYBGKW	113.1 L	110.1	112.7	106.5 L	110.6	-0.99	4.6	3.0	110.6	-1.22	4.6	3.0	4	XX
FYDZQ8	116.4	116.7	119.3	101.1 X	113.4	-0.39	8.2	8.3 H	115.4	0.11	8.7	4.4	16	TB
G422AX_AL	111.0	112.8	109.9	110.6	111.1	-0.89	12.7	1.2	108.7	-1.77	10.5	2.7	16	AL
GGRYBW	116.5	121.5	116.4	118.7	118.3	0.65	10.2	2.4	118.7	1.06	9.7	3.9	16	LC
GGRYBW_AI	120.5	121.5	115.6	117.8	118.8	0.77	10.1	2.7	118.5	0.99	9.6	2.4	16	AL
GJR8DK	109.8	109.7	112.3	114.2	111.5	-0.80	9.4	2.2	113.0	-0.56	8.5	2.2	16	ME
GMH9KU	116.2	115.6	116.6	117.6	116.5	0.27	9.3	0.8	115.7	0.20	10.2	2.8	8	LJ
HV4WT2	108.6	98.8 X	110.9	110.2	107.1	-1.73	8.6	5.6	109.4	-1.56	8.3	4.9	16	LC
JHDLJ2	111.8	112.0	114.2	121.0	114.8	-0.10	10.6	4.3	113.1	-0.52	10.5	4.0	16	LZ



**Containerboard Interlaboratory Testing Program**  
 Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42H3**  
 TAPPI Official Test Method T807

**Report #653**  
**February 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	
KAYXJ9	108.0	110.4	112.5	104.6 *	108.9	-1.36	8.5	3.4	110.3	-1.31	9.3	2.6	16	LZ
LQ2W82	114.8	113.4	112.6	114.0	113.7	-0.32	9.5	0.9	111.9	-0.85	9.6	2.3	16	LC
M3AWFZ	115.6	112.8	115.6	116.7	115.2	-0.01	9.4	1.7	116.5	0.43	9.2	3.3	8	XX
MPPGD2_AL	117.2	112.8	115.2	110.2	113.9	-0.29	8.0	3.0	114.5	-0.13	10.6	3.7	16	AL
NV88C2_AL	117.3	119.9	114.8	112.4	116.1	0.19	10.0	3.2	116.0	0.30	9.0	3.7	15	AL
PDYUVV_AL	122.0	126.0 *	119.5	123.0	122.6	1.58	7.1	2.7	123.2	2.32 *	7.4	2.5	16	AL
PHF3JV_AL	118.1	118.0	118.2	118.7	118.2	0.65	9.9	0.3 L	116.7	0.48	9.9	2.7	12	XX
PMMTL2_AL	117.4	108.3	116.9	119.2	115.4	0.04	9.4	4.9	116.0	0.30	7.7	3.0	14	AL
PZBTD4	114.3	115.6	113.4	112.1	113.8	-0.30	6.7	1.5	111.7	-0.91	6.4	4.1	16	LJ
QBAV9K_AL	115.0	110.9	114.9	112.1	113.2	-0.43	10.0	2.1	113.1	-0.53	9.5	2.7	16	AL
RC243L	114.4	117.2	116.1	113.9	115.4	0.04	6.6	1.5	115.4	0.12	5.8	1.0 L	16	AH
T6BDTW	127.5 *	125.9 *	118.3	121.2	123.2	1.71	11.5	4.2	121.1	1.72	10.4	3.2	16	LJ
UQUFNV	113.8 L	113.3 L	110.1	117.3	113.6	-0.34	4.9	2.9	113.6	-0.37	4.9	2.9	4	LA
V9PMWD	105.0 *	107.6	99.4 X	108.9	105.3	-2.13 *	9.2	4.2	107.6	-2.06 *	7.8	3.9	16	XX
VA4WAK	118.0 L	117.4 L	117.5 L	117.2 L	117.5	0.49	3.2	0.3 L	118.2	0.90	3.0	3.5	16	AH
VAJFTW	110.8	114.6	108.4	106.0	110.0	-1.13	10.9	3.7	110.6	-1.21	9.8	3.5	16	AH
XCPWE	113.6	115.0	115.9	116.4	115.2	0.00	5.6	1.2	115.7	0.20	5.7	1.0 L	16	TP
XKD9FE	135.0 X	124.0 H	128.8 *	118.8	126.7	2.44 *	11.3	6.9	129.3	4.02 X	9.6	4.1	16	AX
YB8QHF	105.3 *	109.0	108.9	114.8	109.5	-1.22	8.5	3.9	109.0	-1.67	8.7	3.5	16	LA
YUW8H4	93.6 X	117.5 L	118.8	120.5	112.6	-0.56	4.9	12.7 H	116.9	0.55	5.9	6.7	16	LA
ZD7N4T	117.5	124.1	118.8	112.5	118.2	0.64	12.4	4.7	120.8	1.65	10.6	4.5	16	LC
ZDQ3UQ	No DATA	117.4	117.8	No DATA	117.6	0.51	7.0	0.3	117.3	0.64	5.9	1.8	12	AX
ZDQ3UQ_AL	No DATA	118.3	No DATA	No DATA	118.3	0.66	6.6	0.0	110.5	-1.24	6.0	12.4 H	10	AL

Consensus (All Labs) Results														
Wk Mean	115.20	116.10	115.94	114.92	Month Mean	115.22			Grand Mean	114.96				
Avg SDr	9.23	9.01	9.59	9.05	Avg SD	9.22			Avg SD	8.83				
SD btwn Labs	4.59	5.05	5.15	4.67	SD btwn Labs	4.68			SD btwn Labs	3.57				
Labs Incl	54	56	55	53	SD btwn Wks	3.65			SD btwn Wks	3.97				
Labs Excl	2	2	1	2	Labs Incl	58			Labs Incl	55				
Labs not Rcvd	2	0	2	3										



Containerboard Interlaboratory Testing Program  
Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42H3**  
TAPPI Official Test Method T807

**Report #653**  
**February 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>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 207  
**Bursting Strength (Mullen), 35 lb Linerboard - 35E3**  
 TAPPI Official Test Method T807

**Report #653**  
**February 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	
2BWVPK_AL	95.2 H	103.1 X	103.6 X	96.8	99.7	2.32 *	10.3	4.3	100.3	2.57 *	10.3	4.1	12	XX
3XNDQP	88.1	91.5	88.9	87.7	89.1	-0.74	8.0	1.7	89.9	-0.43	7.3	3.0	12	AH
4B7MU7	97.0	94.5	98.0	96.5	96.5	1.41	7.5	1.5	95.8	1.27	8.9	3.2	12	XX
4CEYAM	84.3 L	84.3 *	84.2 *L	84.6 L	84.4	-2.09 *	2.8	0.2 L	87.8	-1.05	4.0	3.7	12	LA
7UVHHE	96.2	94.0	94.4	99.2	96.0	1.25	4.8	2.4	95.3	1.12	5.4	2.4	11	AH
84CNU9	89.4	87.9	92.7	89.7	89.9	-0.49	9.2	2.0	90.1	-0.38	7.5	2.0	12	LC
8MQA84_AL	83.0 H	90.2	No DATA	No DATA	86.6	-1.44	11.9	5.2	86.6	-1.39	11.9	5.2	2	AL
8URHVJ_AL	94.0	90.3	93.9	94.4	93.1	0.44	7.1	1.9	92.2	0.22	7.3	1.9	8	AL
9PDYD3_AL	94.6	92.3	92.6	92.5	93.0	0.40	8.0	1.1	93.0	0.46	8.0	1.1	4	AL
9QM92T	97.6	95.7	96.7	93.8	96.0	1.25	9.1	1.6	95.5	1.19	7.8	1.6	12	AH
A6XC3E_AL	91.2	88.4	89.9	93.3	90.7	-0.26	8.0	2.1	89.8	-0.45	9.3	2.4	12	AL
AE9ENE	100.1	96.0	88.0	88.7	93.2	0.46	7.0	5.8	91.9	0.13	7.5	4.0	12	LA
BQV3Y6	95.3	95.3	90.3	94.2	93.8	0.62	5.7	2.4	94.3	0.84	7.0	1.9	8	LC
BUGPQR	91.3	92.6 H	90.9	94.4	92.3	0.19	9.0	1.6	91.1	-0.09	8.2	4.2	12	LB
CCA8VD	81.4 *	82.8 *	79.4 X	75.9 X	79.9	-3.37 X	7.5	3.0	82.7	-2.53 *	7.6	2.9	12	LA
CNN633	88.6	92.8	91.8	88.7	90.5	-0.33	8.7	2.1	91.5	0.04	8.4	1.8	12	LA
CQE776	87.9	88.7	86.1 H	91.4	88.5	-0.89	9.6	2.2	88.7	-0.77	8.3	1.6	12	XX
CYNVJ4	91.2	91.0 L	91.6 L	92.0 L	91.5	-0.05	3.1	0.4 L	91.4	0.00	3.2	0.5 L	12	LA
D6Q4QW_AL	92.5	92.1	89.0	89.7	90.8	-0.22	7.6	1.7	90.8	-0.17	6.8	1.8	12	AL
DZVAQA	88.1	89.9	87.8	83.5	87.3	-1.24	5.9	2.7	87.5	-1.12	7.1	2.2	9	LJ
DZVAQA_AL	89.5	88.0	95.3	90.8	90.9	-0.21	6.2	3.1	91.0	-0.12	6.9	2.3	9	AL
E7GPU8	95.0	95.3	93.4	94.6	94.6	0.86	8.6	0.8	94.1	0.78	8.7	1.7	12	LA
E7GPU8_AL	92.5	97.6	97.3	94.0	95.3	1.07	7.8	2.5	94.2	0.82	6.5	2.5	12	AL
FGU734	88.2	90.9	88.4	90.5	89.5	-0.61	7.9	1.4	89.1	-0.67	8.0	2.8	12	LA
FKTHX4	98.7	97.3	94.7	99.4	97.5	1.70	8.7	2.1	94.8	1.00	8.3	3.3	12	AH
FYBGKW	89.4	90.0	93.0	90.6	90.8	-0.24	5.2	1.5	91.4	0.00	6.0	1.7	8	XX
FYDZQ8	93.2	91.8	97.3	95.3	94.4	0.80	7.6	2.4	101.9	3.04 X	8.1	12.1 H	12	TB
G422AX_AL	84.1	90.1 L	85.2	84.1	85.9	-1.65	7.2	2.9	85.8	-1.61	6.9	1.9	12	AL
GGRYBW	89.4	94.3	92.3	98.0	93.5	0.54	9.6	3.6	94.9	1.01	8.1	3.3	12	LC
GGRYBW_AI	93.6	94.3	98.4 *	96.8	95.8	1.20	9.8	2.2	94.8	0.98	8.9	5.2	12	XX
GJR8DK	94.6	92.7	93.2	94.9	93.9	0.65	7.9	1.1	93.2	0.53	9.0	2.1	12	ME
GMH9KU	88.2	88.3	85.6	82.4 *	86.1	-1.58	5.7	2.8	86.1	-1.53	5.7	2.8	4	LJ
HV4WT2	88.5	97.0	89.4	90.6	91.4	-0.07	6.5	3.8	90.0	-0.39	6.6	3.3	12	LC
JHDLJ2	89.6	98.2 *	89.5	92.3	92.4	0.22	6.9	4.1	94.9	1.01	6.4	4.1	8	LZ
KAYXJ9	85.9	82.3 *	89.2	87.4	86.2	-1.56	8.9	2.9	86.6	-1.40	8.1	2.7	12	LA



**Containerboard Interlaboratory Testing Program**  
 Analysis 207  
**Bursting Strength (Mullen), 35 lb Linerboard - 35E3**  
 TAPPI Official Test Method T807

**Report #653**  
**February 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	
LQ2W82	88.5	92.3	91.9	87.2	90.0	-0.47	6.8	2.5	88.7	-0.79	7.7	2.6	12	LA
M3AWFZ	96.8	86.1	90.2	95.8	92.2	0.17	6.9	5.0	92.2	0.24	6.9	5.0	4	XX
MPPGD2_AL	92.3	94.9	89.6	94.4	92.8	0.33	7.0	2.4	91.3	-0.03	7.9	2.3	12	AL
NV88C2_AL	93.0	86.7	87.7	91.0	89.6	-0.58	8.1	2.9	89.0	-0.69	7.6	2.8	10	AL
PDYUVV_AL	98.7	94.9	95.0	101.8 *	97.6	1.72	5.7	3.3	97.7	1.83	6.5	2.6	12	AL
PHF3JV_AL	85.8	93.7	90.1	89.2	89.7	-0.55	7.7	3.2	90.4	-0.30	7.2	2.5	12	XX
PMMTL2_AL	88.6	88.5	93.0	91.2	90.3	-0.37	7.7	2.2	89.9	-0.43	7.3	2.6	10	AL
PZBTD4	91.8	91.9	90.3	92.8	91.7	0.02	5.1	1.0	91.6	0.05	6.5	1.1	12	LJ
QBAV9K_AL	84.2	88.6	85.5	83.1 *	85.3	-1.80	8.0	2.4	87.4	-1.15	7.7	2.7	12	AL
RC243L	90.4	90.3	91.5	89.6	90.5	-0.34	5.7	0.8	91.0	-0.11	5.3	0.7 L	12	AH
T6BDTW	93.5	90.3	90.1	92.3	91.6	-0.01	8.1	1.6	92.7	0.37	8.3	2.1	12	LJ
UQUFNV	85.3	89.3	86.9 L	87.8	87.4	-1.23	3.8	1.7	87.6	-1.09	4.3	2.4	8	LA
V9PMWD	88.0	89.0	83.7 *	87.6	87.1	-1.31	5.7	2.3	87.1	-1.24	5.8	3.8	12	XX
VA4WAK	102.8 *	102.5 X	102.3 X	102.2 *	102.5	3.12 X	3.9	0.3 L	96.9	1.61	3.3	4.2	12	AH
VAJFTW	87.6	92.8	89.2	94.0	90.9	-0.21	8.8	3.0	88.7	-0.79	7.8	3.5	12	AH
XCXPWE	92.0	91.0	92.6	89.3	91.2	-0.11	4.6	1.4	91.2	-0.06	5.3	1.3	12	TP
YB8QHF	92.0	90.2	94.0	93.3	92.4	0.21	9.2	1.7	88.5	-0.85	8.6	3.6	12	LA
YUW8H4	117.5 X	92.7	93.6	92.2	99.0	2.12 *	4.9	12.3 H	96.5	1.48	6.4	7.0 H	12	LA
ZD7N4T	97.8	92.3	94.8	93.4	94.6	0.85	10.0	2.4	96.0	1.33	11.1	3.5	12	LC
ZDQ3UQ	No DATA	91.0 L	91.4	No DATA	91.2	-0.12	4.7	0.3	93.3	0.55	5.1	1.6	8	AX
ZDQ3UQ_AL	No DATA	91.5	No DATA	No DATA	91.5	-0.03	6.6	0.0	92.0	0.18	6.5	1.7	7	AL

Consensus (All Labs) Results													
Wk Mean	91.25	91.42	91.18	91.95	Month Mean	91.62	Grand Mean	91.40					
Avg SDr	7.57	7.26	7.85	7.24	Avg SD	7.51	Avg SD	7.44					
SD btwn Labs	4.64	3.48	3.57	4.45	SD btwn Labs	3.48	SD btwn Labs	3.45					
Labs Incd	53	54	51	52	SD btwn Wks	3.08	SD btwn Wks	2.99					
Labs Exclcd	1	2	3	1	Labs Incd	54	Labs Incd	55					
Labs not Rcvd	2	0	2	3									



Containerboard Interlaboratory Testing Program  
Analysis 207  
**Bursting Strength (Mullen), 35 lb Linerboard - 35E3**  
TAPPI Official Test Method T807

**Report #653**  
**February 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>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 - 42H3**  
 TAPPI Official Test Method T822

**Report #653**  
**February 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	
2BWVPK	102.2 *	72.8 XH	101.2	99.6 L	94.0	-0.54	6.8	14.2 H	91.1	-1.56	6.2	11.5 H	16	LZ
3XNDQP	95.5 L	95.1	96.8	96.2	95.9	0.27	2.8	0.7	95.7	0.14	2.5	0.9 L	16	LC
4CEYAM	93.0 L	92.8 L	93.1 L	92.3 L	92.8	-1.03	1.2	0.4 L	94.4	-0.33	1.5	1.4	16	TU
84CNU9	92.0	91.3 H	102.3 *	86.9 *	93.1	-0.89	5.9	6.5 H	98.0	1.00	4.2	4.5	16	MB
8URHVJ	98.2	95.5	99.9	96.9	97.6	1.01	3.7	1.9	98.3	1.13	3.4	1.2	16	LC
8ZTR2C	97.6	92.7	91.8 L	94.1	94.0	-0.51	3.0	2.6	94.5	-0.29	2.7	1.8	16	LC
9PDYD3	95.6	94.9	95.5 L	95.8	95.5	0.09	2.5	0.4 L	95.5	0.08	2.3	0.8 L	8	LD
9QM92T	95.7 L	92.8	94.6	97.9 L	95.3	0.01	2.3	2.1	95.0	-0.12	2.2	2.1	16	LG
A6XC3E	99.0 L	96.7	97.0	97.2	97.5	0.94	2.2	1.0	100.2	1.84	2.6	2.0	16	LD
AW8RY2	102.3 *	100.3 *	102.8 *	100.2	101.4	2.61 *	4.3	1.4	99.4	1.54	3.9	2.0	16	MB
BUGPQR	95.1	94.5	97.7	97.0	96.1	0.35	5.3	1.5	96.7	0.52	4.1	2.6	16	LD
BYRV8Y	93.5 L	92.9	96.0	93.2 L	93.9	-0.57	2.2	1.4	94.1	-0.44	3.1	2.4	16	LC
CCA8VD	96.2 H	98.7 H	96.3 H	100.5 H	97.9	1.13	22.0	2.1	94.0	-0.49	20.7	4.1	16	LB
CNN633	92.5	93.8	93.0 L	95.4	93.7	-0.66	2.6	1.2	94.8	-0.19	2.5	1.3	16	LD
D6Q4QW	72.7 XH	71.7 X	72.4 X	73.3 X	72.5	-9.62 X	6.4	0.6	70.4	-9.35 X	7.3	2.0	16	LD
E7GPU8	96.9 L	98.4	96.6	92.3	96.0	0.34	3.4	2.6	95.6	0.13	3.2	1.9	12	LD
FKTHX4	93.7	94.7 L	94.5	94.4 L	94.3	-0.38	2.6	0.4 L	94.2	-0.40	2.9	1.2	16	LD
FYBGKW	91.8	95.6	96.9	95.2	94.9	-0.16	4.2	2.2	94.9	-0.16	4.2	2.2	4	TU
FYDZQ8	91.8	90.7	99.6	99.2	95.3	0.03	3.0	4.7	92.7	-0.96	3.0	3.4	16	LD
GGRYBW	92.3	95.2	90.8	89.4	91.9	-1.40	2.7	2.5	93.1	-0.83	3.1	4.4	16	LD
GJR8DK	101.4	103.9 X	108.6 X	98.1	103.0	3.28 X	3.5	4.4	101.4	2.31 *	4.9	5.2	15	LX
HV4WT2	93.0	91.3	93.7	95.6	93.4	-0.79	3.8	1.8	93.5	-0.66	3.9	2.6	16	LD
JHDLJ2	97.9	90.9	92.3	103.9 *	96.3	0.43	3.3	5.9	93.4	-0.71	3.2	5.9	16	LC
KAYXJ9	93.0	94.9 L	93.9	92.5	93.6	-0.71	2.7	1.0	94.7	-0.22	3.1	1.8	16	LD
LNAXT4	98.2	97.8	99.3	102.0	99.3	1.73	2.4	1.9	100.1	1.80	3.0	1.6	16	LD
LQ2W82	93.0	93.4	92.9	92.6	93.0	-0.96	2.6	0.3 L	92.6	-1.02	2.6	0.9 L	16	LD
MPPGD2	98.7	93.9	92.8	94.1	94.8	-0.17	2.9	2.6	95.7	0.15	3.8	2.4	16	LD
PZBTD4	95.0	95.7	95.4	95.6	95.4	0.09	2.5	0.3 L	94.8	-0.18	2.6	0.9 L	16	LD
RAX9JJ	90.8	90.6	89.5 *	89.5	90.1	-2.18 *	3.7	0.7	90.4	-1.84	3.5	1.8	16	EM
UEJ6XK	95.2	94.4	94.3	95.2	94.8	-0.20	3.3	0.5 L	96.7	0.53	3.3	2.2	16	EM
UQUFNV	89.0 *L	93.7 L	93.4 L	92.9 L	92.3	-1.26	1.6	2.2	92.3	-1.14	1.6	2.2	4	LZ
V4G8NP	101.3	102.4 X	102.9 *	95.3 H	100.5	2.20 *	5.7	3.5	100.6	1.99 *	6.3	2.3	16	TU
V7KYHN	96.9	93.1	97.3	96.8 L	96.0	0.33	2.8	1.9	94.2	-0.42	3.3	2.8	12	LD
VA4WAK	97.3	97.6	97.3 L	97.4 L	97.4	0.91	2.0	0.1 L	94.6	-0.28	2.0	1.8	16	LD
W72FBV	93.1 L	96.7	95.7	97.0	95.6	0.15	2.9	1.8	95.9	0.22	2.7	1.1 L	16	TH





**Containerboard Interlaboratory Testing Program**  
 Analysis 215  
**Ring Crush, 42 lb Linerboard - 42H3**  
 TAPPI Official Test Method T822

**Report #653**  
**February 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	
XCXPWE	96.6	96.0	94.9	94.5	95.5	0.11	3.6	1.0	95.9	0.21	3.4	1.9	16	TX
XKD9FE	92.2	92.4	92.9	91.0	92.1	-1.32	4.7	0.8	94.7	-0.24	4.2	16.3	H 16	LD
XYDATF	98.4	98.0	L 96.2	98.5	97.8	1.07	2.8	1.0	97.8	0.92	2.8	1.0	L 4	LD
YUW8H4	93.0	89.9	75.8	X 88.6	86.8	-3.56	X 4.9	7.6	H 90.1	-1.96	* 3.9	5.1	16	LC
ZD7N4T	94.2	94.7	L 95.8	L 95.6	95.1	-0.08	2.0	0.7	95.0	-0.10	2.3	1.0	L 16	LD

Consensus (All Labs) Results														
Wk Mean	95.46	94.49	95.86	95.39	Month Mean	95.24	Grand Mean	95.30						
Avg SDr	4.71	5.13	4.76	4.75	Avg SD	4.95	Avg SD	4.73						
SD btwn Labs	3.27	2.51	3.26	3.61	SD btwn Labs	2.36	SD btwn Labs	2.67						
Labs Incl	39	36	37	39	SD btwn Wks	3.24	SD btwn Wks	4.10						
Labs Excl	1	4	3	1	Labs Incl	37	Labs Incl	39						
Labs not Rcvd	0	0	0	0										

**Key to Instrument Codes Reported by Participants**

EM	Emerson 1200	LB	L&W Crush Tester 240
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
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 217  
**Ring Crush, 35 lb Linerboard - 35E3**  
 TAPPI Official Test Method T822

**Report #653**  
**February 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	
2BWVPK	63.5 X	62.3 XH	87.2	92.4 *	76.3	-1.39	5.6	15.7 H	78.8	-1.18	5.8	12.0 H	12	LZ
3XNDQP	83.7	81.5	82.7	84.9	83.2	0.39	3.6	1.5	83.7	0.68	3.3	1.2	12	LC
4CEYAM	82.1 L	81.6 L	81.6 L	82.4 L	81.9	0.08	1.3	0.4 L	82.3	0.14	2.0	3.2	12	TU
84CNU9	78.5 H	73.1 *	86.3	77.8 H	78.9	-0.72	6.8	5.4	81.9	-0.01	8.1	5.0	12	MB
8URHVJ	84.3	81.1	83.0	83.4	83.0	0.34	4.2	1.3	82.5	0.21	4.1	1.3	12	LC
8ZTR2C	82.3	80.1	82.2	80.0	81.1	-0.14	4.2	1.3	82.3	0.12	3.6	1.9	12	LC
9PDYD3	83.4	84.6	84.6	84.7	84.3	0.69	3.1	0.6 L	84.3	0.89	3.1	0.6 L	4	LD
9QM92T	82.8	83.7	81.4	80.4	82.1	0.11	3.1	1.4	82.8	0.33	3.4	1.3	12	LG
A6XC3E	84.3 L	85.0 L	84.8	84.2	84.6	0.76	2.0	0.4 L	85.3	1.26	2.7	1.2	12	LD
AW8RY2	89.1 *	85.9	87.8	88.0	87.7	1.58	3.9	1.3	84.5	0.96	4.4	3.1	12	MB
BUGPQR	81.6	80.5	81.9	81.8	81.4	-0.06	4.6	0.6 L	84.7	1.03	4.3	3.2	12	LC
BYRV8Y	82.0	81.8	81.7	82.6	82.0	0.09	3.7	0.4 L	82.5	0.19	3.7	1.4	12	LC
CCA8VD	74.8 *H	74.3 H	73.4 *H	69.8 *H	73.1	-2.24 *	14.3	2.3	78.0	-1.50	11.5	14.2 H	12	LB
CNN633	81.3	82.0	81.5	83.3	82.0	0.10	3.9	0.9	81.0	-0.35	3.4	1.3	12	LD
D6Q4QW	57.5 XH	57.5 XH	58.0 X	59.1 XH	58.0	-6.17 X	7.6	0.7	59.1	-8.64 X	7.5	1.1 L	12	LD
E7GPU8	85.8	85.9	83.0	85.4	85.0	0.88	4.2	1.4	83.5	0.59	3.4	2.3	12	LD
FKTHX4	83.5	81.6	81.2	83.2	82.4	0.19	3.3	1.1	82.2	0.10	2.8	1.4	12	LD
FYBGKW	76.7	78.8	81.2 H	76.7	78.3	-0.86	5.8	2.2	76.5	-2.05 *	5.5	2.9	8	TU
FYDZQ8	76.7	76.6	81.0	82.0	79.1	-0.68	5.1	2.8	79.3	-1.02	5.4	1.6	12	LC
GGRYBW	78.6	80.9 L	79.4	81.7	80.2	-0.39	3.2	1.4	78.1	-1.47	3.4	2.8	12	LD
GJR8DK	86.3	84.0	84.9 H	79.1	83.6	0.50	7.0	3.1	83.2	0.49	6.7	3.7	12	LX
HV4WT2	79.9	82.6	82.1	81.8	81.6	-0.02	4.3	1.1	82.0	0.02	4.0	1.5	12	LD
JHDLJ2	82.2	80.2	72.4 *	84.8	79.9	-0.46	3.8	5.4	183.3	38.26 X	07.9	288.1 H	8	LC
KAYXJ9	81.9	81.3	79.6	82.5	81.3	-0.09	3.6	1.3	82.5	0.20	3.5	1.6	12	LD
LNAXT4	86.3	88.3	90.2	94.7 *	89.9	2.14 *	3.0	3.6	87.0	1.89	2.7	3.3	12	LD
LQ2W82	80.7	83.1	81.5	80.8	81.5	-0.03	3.3	1.1	82.1	0.07	3.2	1.0 L	12	LD
MPPGD2	81.5	81.8	82.8	80.8	81.7	0.01	4.5	0.8	82.4	0.15	4.3	2.3	12	LD
PZBTD4	83.1	81.3	82.5	83.9	82.7	0.27	3.8	1.1	83.4	0.55	3.1	2.2	12	LD
RAX9JJ	76.3	74.3 *	74.2 *	75.1	75.0	-1.75	3.7	1.0	73.0	-3.37 X	4.1	3.4	12	EM
UEJ6XK	81.0	80.3	81.5	81.3	81.0	-0.16	4.4	0.6 L	82.7	0.29	3.9	1.5	12	EM
UQUFNV	76.9 L	80.1	79.5	80.3	79.2	-0.64	1.9	1.6	81.3	-0.25	2.1	2.6	8	LZ
V4G8NP	84.7	86.7	89.3	84.2 H	86.2	1.19	6.5	2.3	86.7	1.78	6.4	1.9	12	TU
V7KYHN	83.0	82.1	83.4	83.7	83.1	0.37	2.9	0.7	82.4	0.18	3.6	3.9	12	LD
VA4WAK	91.8 X	90.9 *	91.3 *	91.3	91.3	2.52 *	2.6	0.3 L	80.2	-0.67	2.4	8.3	12	LD
W72FBV	83.3 L	84.1 L	83.2	83.7	83.6	0.50	2.3	0.4 L	83.1	0.43	2.6	1.7	12	TH



**Containerboard Interlaboratory Testing Program**  
 Analysis 217  
**Ring Crush, 35 lb Linerboard - 35E3**  
 TAPPI Official Test Method T822

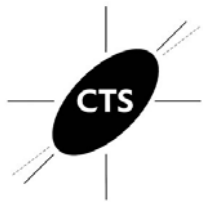
**Report #653**  
**February 2024**

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
XCXPWE	83.7	83.7	80.5	80.9	82.2	0.15	3.3	1.7	81.7	-0.08	3.3	2.2	12	TX
XKD9FE	53.8 <b>X</b>	79.7	78.3 <b>L</b>	78.0	72.4	-2.41 <b>*</b>	3.9	12.5 <b>H</b>	76.4	-2.11 <b>*</b>	4.0	7.9	12	LD
XYDATF	83.9	85.2	83.8	85.2	84.5	0.75	3.1	0.8	84.5	0.97	3.1	0.8 <b>L</b>	4	LD
YUW8H4	75.7	74.4	90.1	71.4 <b>*</b>	77.9	-0.98	5.1	8.3 <b>H</b>	75.7	-2.38 <b>*</b>	4.6	5.4	12	LC
ZD7N4T	79.5	78.8	79.4 <b>L</b>	79.7 <b>L</b>	79.4	-0.60	2.3	0.4 <b>L</b>	80.8	-0.43	2.7	1.6	12	LD

Consensus (All Labs) Results														
Wk Mean	81.70	81.63	82.47	82.25	Month Mean	81.66	Grand Mean	81.95						
Avg SDr	4.89	4.34	4.37	4.75	Avg SD	4.62	Avg SD	4.44						
SD btwn Labs	3.29	3.82	4.12	4.75	SD btwn Labs	3.83	SD btwn Labs	2.65						
Labs Incd	36	38	39	39	SD btwn Wks	3.94	SD btwn Wks	4.28						
Labs Excl'd	4	2	1	1	Labs Incd	39	Labs Incd	37						
Labs not Rcvd	0	0	0	0										

**Key to Instrument Codes Reported by Participants**

<b>EM</b>	Emerson 1200	<b>LB</b>	L&W Crush Tester 240
<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>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 223

Report #653

February 2024

STFI, 42 lb Linerboard - 42H3

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	
2BWVPK_AL	21.6	22.5	21.9	22.4	22.1	-1.71	1.7	0.5	22.4	-1.26	1.5	0.6	16	AL
2LFDGR	22.4	22.1 L	23.5 L	24.2 H	23.0	-0.75	2.2	1.0	23.5	-0.24	2.0	1.0	16	LA
3KGLNH	24.3	23.4	23.1	24.5	23.8	0.04	2.0	0.7	23.9	0.21	1.8	0.6	16	LH
3L9K3F	25.1	25.3	25.4	24.7	25.1	1.38	1.6	0.3	25.1	1.37	1.4	0.3 L	16	LH
3XNDQP	23.0	23.1	23.2	24.3	23.4	-0.38	1.8	0.6	23.1	-0.55	1.8	0.5	16	LU
4CEYAM	20.3 *	20.0 X	20.5 *	20.2 X	20.3	-3.60 X	1.5	0.2	21.1	-2.55 *	1.7	0.7	16	XX
643ZFC	23.8	23.9	23.6	24.3	23.9	0.11	1.9	0.3	24.3	0.61	1.7	0.6	16	XX
7UVHHE	24.4	26.4 *	25.4	25.8 *	25.5	1.77	1.8	0.8	25.8	2.12 *	1.9	0.7	13	LU
84CNU9	25.6	25.3	25.4	24.9	25.3	1.56	1.5	0.3	24.9	1.23	1.8	0.6	16	LA
8MQA84_AL	55.0 XL	49.2 XL	NO DATA	NO DATA	52.1	28.98 X	0.0	4.1	52.1	28.10 X	0.0	4.1	2	AL
8URHVJ	23.3	23.2	22.1	24.2 H	23.2	-0.61	1.9	0.9	23.3	-0.34	1.8	1.0	13	LU
8ZTR2C	22.6	22.5	22.0	22.4	22.4	-1.44	1.7	0.2	22.4	-1.29	1.6	0.4	16	LZ
9PDYD3_AL	22.3	23.3	23.7 H	23.6 H	23.2	-0.56	2.2	0.6	23.0	-0.66	2.1	0.6	8	AL
9QM92T	24.7	23.9	24.4	23.3	24.1	0.31	1.7	0.6	23.8	0.11	1.7	0.7	16	BK
A6XC3E_AL	24.1	23.9	22.6	22.6	23.3	-0.49	1.6	0.8	23.4	-0.30	1.5	0.9	16	AL
AE9ENE	22.6	22.0	23.3	22.3 L	22.5	-1.25	1.3	0.6	23.4	-0.32	1.8	0.8	16	LY
AW8RY2	24.0	25.7	23.7	22.7	24.0	0.24	1.5	1.3	23.7	-0.02	1.6	1.0	16	LA
BQV3Y6	24.9	25.3	25.5	24.9	25.2	1.41	1.6	0.3	25.4	1.64	1.8	0.5	16	LA
BUGPQR	24.6	25.5	24.0	24.8	24.7	0.97	2.0	0.6	25.8	2.07 *	1.9	4.4 H	16	LU
C3M7F4	25.4	26.3 *	25.0	25.7 *	25.6	1.87	1.7	0.5	24.7	0.95	1.6	0.8	16	LA
CCA8VD	24.3	23.3	23.8	22.8	23.6	-0.20	1.9	0.6	23.7	-0.03	2.1	1.1	16	LH
CNN633	22.7	23.3	23.3	23.0	23.1	-0.71	1.9	0.3	23.2	-0.52	1.8	0.3 L	16	LY
CQE776	23.9	23.2	23.5	23.0	23.4	-0.38	1.4	0.4	22.5	-1.15	1.6	0.7	16	LH
CYNVJ4	24.1	23.6	23.9	23.6	23.8	0.01	2.0	0.2	23.9	0.20	2.0	0.2 L	16	LZ
D6Q4QW	23.8	23.7	24.1	23.2 L	23.7	-0.06	1.8	0.4	22.8	-0.86	1.9	0.7	16	LY
D6Q4QW_AL	23.5	23.0	23.2	22.9	23.2	-0.63	1.9	0.2	23.3	-0.43	1.7	0.4	16	AL
DZVAQA	24.0	22.0	23.2	23.4	23.2	-0.62	1.8	0.8	22.7	-0.96	1.6	1.1	14	LH
DZVAQA_AL	24.6 L	21.3 *	22.1	22.8	22.7	-1.10	1.4	1.4	22.5	-1.23	1.2	1.3	14	AL
E7GPU8_AL	23.3	23.3	23.7	22.7	23.2	-0.54	2.0	0.4	23.8	0.15	1.7	0.6	12	AL
FH4BD8	22.7 L	23.8	23.1	23.3 L	23.2	-0.56	1.2	0.4	22.8	-0.86	1.5	0.5	16	LW
FKTHX4	23.7	23.8	23.9	23.7	23.8	-0.01	1.6	0.1 L	23.2	-0.50	1.6	0.5	16	LU
FYBGKW	23.6	23.1 H	23.5	24.0	23.5	-0.23	2.4	0.4	23.5	-0.15	2.4	0.4	4	TT
FYDZQ8	23.5 H	24.1	24.2	23.7	23.9	0.09	2.0	0.3	24.0	0.27	2.2	0.7	16	LW
G422AX_AL	25.1	23.1	24.1	23.8	24.0	0.26	1.9	0.8	23.9	0.25	1.9	0.8	16	AL
GGRYBW	21.3	23.6	23.6	21.4 *	22.5	-1.30	1.6	1.3	22.3	-1.40	1.8	1.7	16	LZ



**Containerboard Interlaboratory Testing Program**  
 Analysis 223  
**STFI, 42 lb Linerboard - 42H3**  
 TAPPI Official Test Method T826

**Report #653**  
**February 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
GGRYBW_AI	43.7 <b>XL</b>	46.1 <b>XL</b>	45.2 <b>XL</b>	45.0 <b>XL</b>	45.0	21.73 <b>X</b>	0.0	1.0	45.2	21.30 <b>X</b>	0.0	4.5 <b>H</b>	16	AL
GJR8DK	23.0	23.9 <b>H</b>	32.3 <b>X</b>	24.7	26.0	2.26 <b>*</b>	2.5	4.3 <b>H</b>	24.3	0.62	2.1	2.5 <b>H</b>	16	LZ
HV4WT2	23.2	23.7	23.2	25.1	23.8	0.00	1.6	0.9	23.9	0.23	1.7	1.1	16	LA
JHDLJ2	21.3	21.9	21.1 <b>*</b>	22.8	21.8	-2.05 <b>*</b>	1.6	0.8	21.3	-2.38 <b>*</b>	1.6	1.7	16	LY
KAYXJ9	24.1	24.0	24.1	23.9	24.0	0.23	1.4	0.1 <b>L</b>	23.3	-0.36	1.7	1.1	16	LY
LNAXT4	25.9	26.0	26.7 <b>*</b>	25.0	25.9	2.20 <b>*</b>	1.6	0.7	25.8	2.03 <b>*</b>	1.8	0.6	16	LH
LQ2W82	23.0	23.0 <b>L</b>	23.4	23.1	23.1	-0.67	1.4	0.2	23.0	-0.68	6.4	0.5	16	LA
MN8MCQ	22.8	23.2	22.0	22.8	22.7	-1.07	1.6	0.5	22.9	-0.75	1.5	0.6	16	LH
MPPGD2_AL	24.1	23.5	23.7	24.1	23.8	0.07	1.9	0.3	23.9	0.16	1.8	0.3 <b>L</b>	16	AL
PDYUVV_AL	22.6	22.1	24.1	23.4	23.1	-0.73	2.0	0.9	23.6	-0.08	1.7	0.8	16	AL
PHF3JV_AL	26.3 <b>*</b>	26.8 <b>*H</b>	27.0 <b>*</b>	28.4 <b>X</b>	27.1	3.40 <b>X</b>	2.0	0.9	25.1	1.43	1.6	1.9	12	XX
PMMTL2	<b>No DATA</b>	23.7	22.7	23.6 <b>L</b>	23.4	-0.42	1.6	0.5	23.7	0.02	1.6	1.1	13	LU
QBAV9K_AL	31.9 <b>X</b>	29.3 <b>X</b>	31.0 <b>XH</b>	30.3 <b>XH</b>	30.6	7.02 <b>X</b>	2.6	1.1	30.0	6.19 <b>X</b>	2.4	0.9	16	AL
T6BDTW	24.7	24.7	24.4	25.2	24.7	1.00	1.8	0.3	24.5	0.81	2.1	0.6	16	LH
TFHT2P	25.0	24.3	25.2	24.9	24.8	1.09	1.6	0.4	23.0	-0.69	1.8	2.0	12	LU
TTKGRX	22.3	24.0	23.5	22.7	23.1	-0.66	1.5	0.8	24.3	0.58	1.6	1.0	16	XX
V4G8NP	25.7	25.4	25.8	24.8	25.4	1.69	1.6	0.5	24.9	1.20	1.8	0.6	16	LA
XKD9FE	23.4	25.2	24.6	23.8	24.2	0.48	1.7	0.8	24.7	0.95	1.7	1.5	16	LH
YB8QHF	23.6	24.3	23.5	24.8	24.1	0.29	2.0	0.6	24.4	0.67	2.0	0.4	16	LH
YUW8H4	23.6	24.7	24.8	23.5	24.2	0.39	1.8	0.7	24.2	0.54	1.7	0.4	16	LA
ZD7N4T	22.3	22.2	22.9	23.0	22.6	-1.19	1.7	0.4	23.1	-0.57	1.6	0.7	16	LA
ZDQ3UQ	<b>No DATA</b>	24.7	24.5	<b>No DATA</b>	24.6	0.83	1.6	0.1	24.4	0.73	1.8	0.5	12	LU
ZDQ3UQ_AL	<b>No DATA</b>	23.5	<b>No DATA</b>	<b>No DATA</b>	23.5	-0.24	1.9	0.0	23.7	-0.01	1.5	0.7	10	AL

Consensus (All Labs) Results														
Wk Mean	23.64	23.82	23.75	23.73	Month Mean	23.77			Grand Mean	23.70				
Avg SDr	1.64	1.86	1.75	1.83	Avg SD	1.77			Avg SD	1.94				
SD btwn Labs	1.24	1.23	1.25	0.98	SD btwn Labs	0.98			SD btwn Labs	1.01				
Labs Inclcd	52	54	53	51	SD btwn Wks	0.86			SD btwn Wks	1.10				
Labs Exclcd	3	4	3	4	Labs Inclcd	53			Labs Inclcd	55				
Labs not Rcvd	3	0	2	3										



Containerboard Interlaboratory Testing Program  
Analysis 223  
**STFI, 42 lb Linerboard - 42H3**  
TAPPI Official Test Method T826

**Report #653**  
**February 2024**

**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, 35 lb Linerboard - 35E3

TAPPI Official Test Method T826

Report #653

February 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								
2BWVPK_AL	22.3	22.2	22.1	22.6	22.3	-1.20	1.8	0.2	23.7	0.17	1.8	2.9	H 12	XX							
2LFDGR	22.8	22.4	21.9	23.2	L	22.6	-0.94	1.7	0.6	22.7	-1.03	1.7	0.8	12	LA						
3KGLNH	24.0	23.5	23.6	23.7	23.7	0.17	1.7	0.2	24.0	0.48	1.7	0.6	12	LH							
3L9K3F	25.0	24.8	24.7	26.0	*	25.1	1.57	1.7	0.6	25.0	1.64	1.4	0.5	12	LH						
3XNDQP	23.2	23.7	23.4	23.2	23.4	-0.17	1.7	0.2	23.4	-0.23	1.7	0.4	12	LU							
4CEYAM	19.9	X	20.9	*	20.7	*	19.7	X	20.3	-3.19	X	1.9	0.6	150.5	146.21	X	2.2	192.4	H	12	XX
643ZFC	23.8	24.5	23.5	24.4	24.1	0.51	1.9	0.5	24.0	0.53	1.7	0.5	12	XX							
7UVHHE	25.1	24.7	25.1	25.1	25.0	1.45	2.2	0.2	25.4	2.13	*	2.2	0.7	11	LU						
84CNU9	21.9	24.3	23.2	24.5	23.5	-0.05	1.6	1.2	23.8	0.28	1.7	0.9	12	LA							
8MQA84_AL	37.6	XL	34.8	XL	No DATA	No DATA	36.2	12.44	X	0.0	2.0	36.2	14.49	X	0.0	2.0	2	AL			
8URHVJ	23.8	24.6	22.5	25.5	24.1	0.56	1.7	1.3	24.4	0.91	1.7	1.3	8	LU							
8ZTR2C	22.2	22.2	22.0	22.1	22.1	-1.38	1.4	0.1	L	21.8	-2.10	*	1.5	0.6	12	LZ					
9PDYD3_AL	23.3	24.0	24.2	25.2	24.2	0.63	2.0	0.8	24.2	0.69	2.0	0.8	4	AL							
9QM92T	22.7	22.8	23.0	23.1	22.9	-0.62	1.5	0.2	23.1	-0.59	1.6	0.5	12	LW							
A6XC3E_AL	22.2	22.6	23.8	23.0	22.9	-0.66	1.7	0.7	23.3	-0.35	1.5	0.7	12	AL							
AE9ENE	21.6	21.7	21.7	22.4	21.9	-1.65	1.8	0.4	22.7	-0.99	1.8	0.9	12	LU							
AW8RY2	24.7	25.3	25.2	H	24.4	H	24.9	1.34	2.4	0.4	23.9	0.40	2.0	0.9	12	LA					
BQV3Y6	22.6	24.5	23.2	24.8	L	23.8	0.23	1.6	1.1	24.9	1.51	1.7	1.4	8	LA						
BUGPQR	26.2	*	26.4	*	26.1	*	26.2	*	26.2	2.62	*	1.7	0.1	L	25.3	2.02	*	1.7	0.8	12	LW
C3M7F4	24.4	25.0	24.6	L	25.0	24.7	1.19	1.3	0.3	24.6	1.20	1.5	0.7	12	LA						
CCA8VD	23.0	24.3	23.2	22.6	23.3	-0.27	2.2	0.7	24.0	0.44	2.0	1.0	12	LH							
CNN633	23.0	L	22.9	22.6	23.7	23.1	-0.47	1.6	0.5	23.1	-0.51	1.6	0.4	12	LY						
CQE776	23.1	22.7	23.4	L	22.7	23.0	-0.55	1.2	0.3	22.4	-1.38	1.3	0.5	12	LH						
CYNVJ4	23.6	24.0	23.7	23.8	23.8	0.24	1.8	0.2	23.5	-0.07	1.9	0.4	12	LA							
D6Q4QW	23.3	23.7	22.9	23.4	23.3	-0.22	2.2	0.3	22.4	-1.33	2.1	0.7	12	LU							
D6Q4QW_AL	22.5	21.8	22.2	H	22.0	22.1	-1.42	2.0	0.3	22.7	-0.97	1.9	0.6	12	AL						
DZVAQA	23.3	22.0	23.0	22.5	22.7	-0.85	1.9	0.6	22.7	-0.96	1.7	0.9	9	LH							
DZVAQA_AL	23.1	22.1	21.8	22.7	22.4	-1.09	1.5	0.6	22.5	-1.28	1.4	0.7	9	AL							
E7GPU8_AL	22.7	23.4	24.1	23.7	23.5	-0.08	1.6	0.6	23.5	-0.10	1.6	0.5	12	AL							
FH4BD8	23.5	23.3	22.8	22.2	22.9	-0.60	1.7	0.6	22.6	-1.18	1.8	0.5	12	LW							
FKTHX4	23.9	25.1	23.3	23.0	23.8	0.27	1.8	0.9	23.3	-0.32	1.7	0.7	12	LU							
FYBGKW	23.4	23.3	22.8	23.7	23.3	-0.24	2.1	0.4	22.9	-0.82	2.1	0.6	8	TT							
FYDZQ8	24.0	24.2	21.8	21.7	22.9	-0.62	1.9	1.4	23.2	-0.49	2.1	1.1	12	LW							
G422AX_AL	23.5	24.2	24.1	23.0	23.7	0.16	2.0	0.6	23.8	0.23	1.9	0.6	12	AL							
GGRYBW	22.2	23.0	L	22.5	22.4	22.5	-1.00	1.5	0.3	21.9	-1.93	1.4	1.2	12	LZ						



**Containerboard Interlaboratory Testing Program**  
 Analysis 225  
**STFI, 35 lb Linerboard - 35E3**  
 TAPPI Official Test Method T826

**Report #653**  
**February 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
GGRYBW_AI	32.0 <b>XL</b>	34.5 <b>XL</b>	34.7 <b>XL</b>	33.1 <b>XL</b>	33.6	9.90 <b>X</b>	0.0	1.3	33.2	11.11 <b>X</b>	0.0	1.5	12	AL
GJR8DK	23.6	24.5	27.9 <b>XH</b>	24.5	25.1	1.58	2.6	1.9 <b>H</b>	24.0	0.50	2.4	2.0 <b>H</b>	11	LZ
HV4WT2	23.7	24.1	24.6	24.0	24.1	0.57	1.9	0.4	23.4	-0.23	1.8	1.4	12	LA
JHDLJ2	20.7 <b>*</b>	22.9	19.1 <b>X</b>	21.8	21.1	-2.39 <b>*</b>	1.7	1.6	22.4	-1.39	2.1	1.8	8	LZ
KAYXJ9	24.0	23.0	24.3	23.5	23.7	0.13	1.7	0.6	23.4	-0.17	1.9	0.5	12	LY
LNAXT4	24.1	24.4 <b>H</b>	24.5	24.6 <b>L</b>	24.4	0.84	1.8	0.2	24.6	1.13	1.8	0.4	12	LH
LQ2W82	23.7	22.8	23.1	22.0	22.9	-0.63	1.8	0.7	23.0	-0.71	1.5	0.5	12	LW
MN8MCQ	22.2	21.6	21.6	21.6	21.7	-1.77	1.5	0.3	22.6	-1.13	1.5	0.9	12	LH
MPPGD2_AL	23.7	23.0	23.8	23.6	23.5	-0.03	1.8	0.4	23.8	0.29	1.8	0.6	12	AL
PDYUVV_AL	22.4	23.1	23.1	22.3	22.7	-0.78	1.8	0.4	23.2	-0.45	1.7	0.7	12	XX
PHF3JV_AL	28.5 <b>X</b>	26.2 <b>*</b>	18.1 <b>XH</b>	25.4 <b>H</b>	24.5	0.99	2.4	4.5 <b>H</b>	25.2	1.83	2.0	2.4 <b>H</b>	12	XX
PMMTL2	<b>No DATA</b>	23.5	24.9	23.9 <b>L</b>	24.1	0.53	1.4	0.7	24.3	0.85	1.7	1.2	9	LU
QBAV9K_AL	31.1 <b>X</b>	31.1 <b>X</b>	30.8 <b>X</b>	30.7 <b>X</b>	30.9	7.27 <b>X</b>	2.2	0.2	29.6	6.90 <b>X</b>	2.3	1.5	12	AL
T6BDTW	23.4	24.0	25.0	24.0	24.1	0.55	2.1	0.6	24.1	0.54	2.1	0.6	12	LH
TFHT2P	24.5	24.3	24.4	24.5	24.4	0.88	2.0	0.1 <b>L</b>	23.1	-0.58	1.8	1.1	12	LU
TTKGRX	23.2 <b>L</b>	22.5	23.2	22.5	22.9	-0.67	1.4	0.4	23.2	-0.44	1.4	1.0	12	XX
V4G8NP	26.2 <b>*</b>	25.5	24.4	27.3 <b>X</b>	25.9	2.28 <b>*</b>	2.0	1.2	24.7	1.34	1.8	1.5	12	LA
XKD9FE	23.6	24.1	23.8	24.2	23.9	0.36	1.9	0.3	23.9	0.31	1.6	0.5	12	LH
YB8QHF	23.4	25.0	23.3	23.6	23.8	0.29	2.1	0.8	24.4	0.98	2.2	0.8	12	LH
YUW8H4	24.9	23.5	25.1	23.6	24.3	0.73	2.0	0.8	24.5	1.06	1.6	0.8	12	LA
ZD7N4T	23.1	23.2	22.1	22.6	22.7	-0.80	1.6	0.5	23.2	-0.46	1.7	0.6	12	LA
ZDQ3UQ	<b>No DATA</b>	24.2	23.8	<b>No DATA</b>	24.0	0.48	1.7	0.3	24.2	0.68	1.9	0.6	8	LU
ZDQ3UQ_AL	<b>No DATA</b>	23.5	<b>No DATA</b>	<b>No DATA</b>	23.5	0.00	1.2	0.0	23.6	0.05	1.4	0.4	7	AL

Consensus (All Labs) Results												
Wk Mean	23.40	23.61	23.40	23.52	Month Mean	23.53		Grand Mean	23.58			
Avg SDr	1.75	1.78	1.79	1.86	Avg SD	1.81		Avg SD	1.77			
SD btwn Labs	1.05	1.16	1.13	1.15	SD btwn Labs	1.01		SD btwn Labs	0.87			
Labs Includ	50	55	51	51	SD btwn Wks	0.92		SD btwn Wks	1.00			
Labs Exclcd	5	3	5	4	Labs Includ	54		Labs Includ	54			
Labs not Rcvd	3	0	2	3								





Containerboard Interlaboratory Testing Program  
Analysis 225  
**STFI, 35 lb Linerboard - 35E3**  
TAPPI Official Test Method T826

**Report #653**  
**February 2024**

**Key to Instrument Codes Reported by Participants**

<b>AL</b>	L & W Autoline 400	<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 (was 52M)
<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 - 42H3**  
 TAPPI Official Test Method T575

**Report #653**  
**February 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2BWVPK_AL	130.7	-1.00	19.54	118.5	-2.10 *	11.62	4	AL
84CNU9	157.3	1.23	19.05	153.2	0.84	5.03	4	LA
8URHVJ	152.8	0.85	14.23	143.9	0.06	13.39	4	EV
8ZTR2C	150.1	0.62	18.29	146.0	0.23	7.69	4	EV
AW8RY2	136.9	-0.48	19.09	146.7	0.29	9.16	4	LA
C3M7F4	138.8	-0.32	13.41	146.3	0.25	10.22	4	XX
CNN633	136.4	-0.52	18.13	135.7	-0.64	3.90	4	LS
CYNVJ4	141.8	-0.07	18.41	142.7	-0.05	1.61	L 4	LS
D6Q4QW	81.0	-5.15 X	7.57 L	133.2	-0.85	38.43	H 4	XX
DZVAQA_AL	122.4	-1.69	15.84	138.3	-0.42	27.68	4	AL
FKTHX4	147.7	0.42	14.19	146.3	0.26	1.94	L 4	EV
FYDZQ8	132.5	-0.85	11.76	124.7	-1.57	5.36	4	XX
G422AX_AL	152.3	0.80	27.50	151.0	0.66	20.26	4	AL
GGRYBW	0.3	-11.89 X	0.03 L	86.7	-4.79 X	99.82	H 4	LA
GGRYBW_AL	146.9	0.36	15.91	167.3	2.04 *	20.88	4	AL
HV4WT2	151.3	0.72	23.98	143.1	-0.02	22.10	4	LA
JHDLJ2	215.1	6.05 X	32.58 H	204.2	5.16 X	37.93	H 4	LS
KAYXJ9	181.6	3.25 X	21.20	157.0	1.16	17.22	4	EV
LQ2W82	132.6	-0.84	19.33	134.1	-0.77	3.24	4	LA
M3AWFZ	147.1	0.37	9.17	139.6	-0.31	5.98	4	LS
MPPGD2	137.4	-0.44	13.76	151.7	0.71	28.30	4	LS
PDYUVV_AL	137.8	-0.40	28.85	126.5	-1.42	13.86	4	AL
PHF3JV_AL	160.3	1.47	17.59	156.6	1.13	3.92	3	AL
PMMTL2	160.0	1.45	34.85	156.4	1.11	21.08	3	EV
QBAV9K_AL	163.0	1.70	24.94	162.1	1.60	8.49	4	AL
T6BDTW	120.3	-1.87	9.03	124.9	-1.55	4.49	4	LS
V4G8NP	150.0	0.61	21.02	146.3	0.25	9.63	4	LA
YB8QHF	135.5	-0.60	13.49	136.9	-0.54	2.21	L 4	EV
YUW8H4	145.8	0.26	26.18	148.8	0.47	9.82	3	EV
ZDQ3UQ_AL	121.6	-1.76	17.18	133.9	-0.79	30.94	4	AL

Consensus (All Labs) Results			
Month Mean	142.67	Grand Mean	143.27
Avg SD	19.59	Avg SD Months	16.09
SD btwn Labs	11.97	SD btwn Labs	11.81
Labs Incl	26	Labs Incl	28



Containerboard Interlaboratory Testing Program  
Analysis 228  
**Roughness - Stylus Method, 42 lb Linerboard - 42H3**  
TAPPI Official Test Method T575

**Report #653**  
**February 2024**

**Key to Instrument Codes Reported by Participants**

<b>AL</b>	L & W Autoline 400	<b>EV</b>	Emveco Microgag 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 - 42H3**  
 TAPPI Official Test Method T538

**Report #653**  
**February 2024**

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2LFDGR	385.5	1.70	13.72	377.0	1.13	5.88	4	XX
3XNDQP	375.8	0.71	7.81	376.4	1.03	4.22	4	XX
9PDYD3	369.4	0.05	6.72	370.4	-0.11	1.34	2	PP
A6XC3E_AL	378.8	1.01	6.56	376.8	1.09	3.82	4	AL
CCA8VD	346.7	-2.27 *	3.95	343.1	-5.21 X	2.93	4	LA
CNN633	379.6	1.09	15.00 H	377.7	1.27	2.36	4	XX
D6Q4QW_AL	365.5	-0.35	7.98	365.2	-1.07	4.09	4	AL
DZVAQA_AL	361.3	-0.78	8.79	364.3	-1.25	9.33	4	AL
E7GPU8_AL	370.9	0.21	6.56	370.9	-0.01	0.35 L	3	AL
G422AX_AL	366.9	-0.20	4.41	362.5	-1.57	3.52	4	AL
GGRYBW_AL	368.2	-0.07	11.57	370.1	-0.15	3.24	4	AL
MPPGD2_AL	358.7	-1.04	6.86	366.5	-0.83	9.84	4	AL
PHF3JV_AL	372.8	0.40	7.10	375.6	0.88	2.48	3	XX
RAX9JJ	364.4	-0.46	8.42	368.7	-0.41	4.16	4	TS

Consensus (All Labs) Results			
Month Mean	368.89	Grand Mean	370.91
Avg SD	8.80	Avg SD Months	4.97
SD btwn Labs	9.78	SD btwn Labs	5.34
Labs Incd	14	Labs Incd	13

**Key to Instrument Codes Reported by Participants**

- |   |   |
|---|---|
| <b>AL</b> L & W Autoline 400<br><b>PP</b> Technidyne Profile/Plus<br><b>XX</b> Instrument make/model not specified by lab | <b>LA</b> L & W Autoline (229 Enrollment)<br><b>TS</b> TMI Monitor/Smoothness |
|---|---|



Containerboard Interlaboratory Testing Program  
Analysis 231

Report #653  
February 2024

Internal Bond, 42 Ib Linerboard - 42H

TAPPI Official Test Method T569

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2BWVPK	110.4	-1.17	3.36	109.4	-1.34	7.14	4	TM
2LFDGR	96.8	-1.97 *	1.00 L	111.1	-1.22	9.53	4	SC
3XNDQP	147.0	0.97	3.26	148.4	1.33	1.36 L	4	HY
8URHVJ	115.0	-0.90	2.12	111.9	-1.17	2.80	4	TM
9PDYD3	148.4	1.05	6.88	147.0	1.24	1.98	2	HY
A6XC3E	144.0	0.79	6.04	143.3	0.98	1.27 L	4	LZ
D6Q4QW	130.4	0.00	7.09	122.8	-0.42	5.13	4	TM
E7GPU8	126.3	-0.24	5.34	125.6	-0.23	2.55	3	TM
FKTHX4	129.0	-0.09	3.81	129.7	0.05	1.24 L	4	TM
FYBGKW	122.3	-0.48	5.71	122.3	-0.45	0.00	1	TM
G422AX	140.8	0.61	8.56	146.1	1.18	20.11 H	4	TM
KAYXJ9	157.1	1.56	7.03	134.1	0.35	26.10 H	4	HZ
LQ2W82	164.8	2.01 *	7.98	154.1	1.72	12.64	4	HY
M3AWFZ	137.6	0.42	6.95	142.5	0.93	3.79	4	HY
MPPGD2	117.4	-0.77	7.86	113.3	-1.07	8.67	4	TM
PMMTL2	116.6	-0.81	5.73	114.7	-0.97	2.27	3	TM
V8B2LQ	112.6	-1.05	6.07	110.7	-1.25	5.83	3	XX
YB8QHF	139.6	0.54	2.07	136.1	0.49	3.84	4	TM
YUW8H4	120.8	-0.57	4.09	121.1	-0.54	1.68	4	TM
ZD7N4T	132.2	0.10	7.82	134.5	0.38	3.28	4	HZ

Consensus (All Labs) Results			
Month Mean	130.46	Grand Mean	128.92
Avg SD	5.85	Avg SD Months	9.16
SD btwn Labs	17.09	SD btwn Labs	14.61
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	128.00	15.60	2.46	15
Modified Scott Bond Mechanics	151.95	11.23	21.49	3



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

**Report #653**  
**February 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	<b>XX</b>	Instrument make/model not specified by lab



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

**Report #653**  
**February 2024**

WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SD	Mean	CPV	SD Months	Months
2BWVPK	29.0	0.68	3.30	30.9	1.23	1.35	4
2LFDGR	21.0	-1.64	1.22	21.6	-2.02 *	0.82	4
3XNDQP	26.5	-0.03	0.69	26.2	-0.39	1.52	4
49FLMX	26.2	-0.12	2.59	26.2	-0.41	0.43	4
7UVHHE	32.0	1.57	1.87	28.1	0.25	4.98	4
84CNU9	28.2	0.46	0.76	27.8	0.16	1.73	4
8MQA84	14.0	-3.68 X	1.23	14.0	-4.64 X	0.00	1
8URHVJ	29.0	0.69	2.45	28.2	0.28	4.25	4
8ZTR2C	29.1	0.71	0.97	28.2	0.30	3.04	4
9PDYD3	31.2	1.33	4.21	30.5	1.09	0.99	2
A6XC3E	25.9	-0.21	4.16	26.3	-0.36	1.88	4
CNN633	26.3	-0.10	2.75	31.3	1.36	3.50	4
CYNVJ4	27.2	0.17	0.84	27.4	0.01	0.37 L	4
D6Q4QW	24.6	-0.59	1.82	26.2	-0.41	1.57	4
FKTHX4	20.6	-1.76	2.30	25.3	-0.74	3.84	4
FYDZQ8	27.4	0.23	3.36	29.4	0.70	1.76	4
G422AX	29.8	0.93	3.42	29.9	0.88	0.93	4
HR2VQJ	27.2	0.17	1.92	26.0	-0.49	2.26	4
JHDLJ2	29.6	0.87	1.34	29.2	0.64	0.59	4
KAYXJ9	20.2	-1.87	2.39	29.9	0.88	7.54 H	4
LQ2W82	25.2	-0.42	3.56	24.6	-0.96	0.77	4
M3AWFZ	28.6	0.58	1.14	28.4	0.34	0.30 L	4
MPPGD2	24.0	-0.77	1.58	24.3	-1.07	0.74	4
NV88C2	24.4	-0.65	3.36	27.0	-0.12	2.08	4
PDYUVV	21.2	-1.58	1.30	22.1	-1.83	2.36	4
PMMTL2	31.0	1.28	2.35	33.1	2.00 *	1.86	3
QBAV9K	23.2	-1.00	4.15	23.1	-1.50	3.30	4
T6BDTW	22.0	-1.35	1.22	21.9	-1.90	0.35 L	4
XCXPWE	29.9	0.95	6.67 H	27.9	0.19	1.52	4
XKD9FE	25.7	-0.27	1.96	28.4	0.35	1.90	4
YB8QHF	26.5	-0.04	3.14	28.0	0.23	1.73	4
ZDQ3UQ	32.8	1.80	0.84	31.1	1.29	1.91	4

Consensus (All Labs) Results			
Month Mean	26.63	Grand Mean	27.37
Avg SD	2.72	Avg SD Months	2.53
SD btwn Labs	3.43	SD btwn Labs	2.88
Labs Incl	31	Labs Incl	31



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

**Report #653**  
**February 2024**

**Key to Instrument Codes Reported by Participants**

ZZ Instruments No Longer Tracked





Containerboard Interlaboratory Testing Program  
Analysis 237

Report #653  
February 2024

Air Resistance, 42 lb Linerboard - 42H3

TAPPI Official Test Method T460

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD	Months	
2BWVPK_AL	30.9	-1.45	1.50		31.4	-1.23	1.12	4	AL
3XNDQP	33.4	0.12	3.54		34.0	0.70	0.87	4	TP
49FLMX	33.6	0.27	3.84		32.8	-0.17	0.94	4	TD
7UVHHE	34.1	0.57	3.00		33.4	0.26	1.04	4	GG
84CNU9	31.3	-1.17	2.22		31.5	-1.11	0.49	4	LA
8URHVJ_AL	34.0	0.51	2.12		33.6	0.45	0.45	4	AL
9PDYD3	35.6	1.55	6.31	H	35.5	1.80	0.23	2	TP
A6XC3E_AL	35.4	1.42	1.26		33.8	0.53	1.55	4	AL
AW8RY2	32.1	-0.66	1.48		32.5	-0.41	1.14	4	LA
BQV3Y6	33.4	0.15	1.98		32.2	-0.64	0.83	4	LA
C3M7F4	31.9	-0.79	1.54		32.8	-0.16	0.94	4	XX
CCA8VD	33.6	0.26	2.55		34.0	0.74	1.26	4	LA
CNN633	33.2	0.05	2.78		32.8	-0.15	1.09	4	GA
CYNVJ4	32.9	-0.17	2.23		32.4	-0.50	0.40	4	LP
D6Q4QW	34.9	1.07	1.71		33.1	0.09	1.37	4	LP
D6Q4QW_AL	34.6	0.89	2.53		35.1	1.50	0.96	4	AL
DHF2P9	29.1	-2.57 *	1.40		29.6	-2.56 *	1.25	4	LP
DWYVVA	35.2	1.24	1.68		33.8	0.59	1.12	4	LP
DZVAQA_AL	33.4	0.13	1.12	L	32.8	-0.19	1.20	4	AL
E7GPU8_AL	33.0	-0.12	1.57		33.5	0.37	0.89	3	AL
FKTHX4	35.8	1.67	6.64	H	34.1	0.76	1.89	4	GA
FYBGKW	34.0	0.51	3.36		34.0	0.70	0.00	1	GA
FYDZQ8	34.3	0.68	2.10		34.8	1.27	0.57	4	LP
G422AX_AL	31.6	-0.96	1.10	L	31.7	-0.98	0.56	4	AL
GGRYBW_AL	31.7	-0.94	1.91		31.6	-1.07	0.75	4	XX
HV4WT2	31.9	-0.82	0.64	L	32.8	-0.20	1.62	4	LA
JHDLJ2	24.7	-5.30 X	2.31		25.2	-5.82 X	1.22	4	XX
KAYXJ9	32.6	-0.38	2.12		32.4	-0.47	0.97	4	LP
LNAXT4	35.6	1.52	1.96		34.1	0.77	1.21	4	XX
LQ2W82	33.2	0.02	1.55		33.4	0.23	0.62	4	LP
M3AWFZ	32.0	-0.74	2.40		33.1	0.07	0.78	4	LP
MPPGD2_AL	33.3	0.10	1.42		32.8	-0.20	0.77	4	AL
NV88C2_AL	34.5	0.84	1.49		33.8	0.58	0.50	4	AL
PDYUVV_AL	29.7	-2.15 *	2.53		30.2	-2.10 *	0.38	4	AL
PHF3JV_AL	33.1	-0.06	2.26		32.5	-0.39	1.78	3	XX
PMRTL2_AL	32.0	-0.73	2.67		32.5	-0.42	0.63	4	AL
QBAV9K_AL	35.4	1.41	1.60		36.2	2.36 *	1.07	4	AL
T6BDTW	23.9	-5.82 X	2.14		24.4	-6.36 X	2.39 H	4	TD
UQFENV	33.0	-0.10	1.33		33.0	-0.02	0.00	1	XX



**Containerboard Interlaboratory Testing Program**  
Analysis 237

**Report #653**  
**February 2024**

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

TAPPI Official Test Method T460

WebCode	Monthly Results			Cumulative Results				Inst
	Mean	CPV	SD	Mean	CPV	SD Months	Months	
V4G8NP	32.2	-0.62	2.33	33.1	0.04	1.25	4	LA
YB8QHF	33.9	0.43	2.65	32.5	-0.37	1.13	4	LP
ZDQ3UQ	34.0	0.55	2.44	35.0	1.44	1.12	4	GG
ZDQ3UQ_AL	30.7	-1.54	2.31	30.5	-1.89	2.49	4	AL

Consensus (All Labs) Results			
Month Mean	33.17	Grand Mean	33.03
Avg SD	2.55	Avg SD Months	1.10
SD btwn Labs	1.60	SD btwn Labs	1.35
Labs Incl	41	Labs Incl	41

**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 #653**  
**February 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	
2BUDH9	53.8	55.6	61.1	59.7	57.5	-0.13	3.3	3.4	57.2	-0.37	3.9	2.3	16	LD
38RMXF	66.0 *	67.2 *	65.0 *	68.3 X	66.6	3.62 X	4.9	1.5	67.7	4.40 X	4.6	3.0	16	TX
3KGLNH	58.6	61.8	59.8	59.5	59.9	0.85	4.7	1.3	59.2	0.53	4.3	2.4	16	LD
3L9K3F	56.6	53.8	55.6	55.2	55.3	-1.06	3.1	1.1	54.8	-1.45	3.0	1.1	16	LD
3P8WYF	58.3 L	58.4 L	58.4 L	58.3 L	58.4	0.20	0.5	0.0 L	58.4	0.18	0.6	0.1 L	16	LD
3XNDQP	60.7	62.8	60.9	56.4	60.2	0.96	4.2	2.7	59.0	0.46	4.2	2.3	16	LC
49FLMX	55.7	55.0	58.4	53.5	55.7	-0.91	4.2	2.1	56.4	-0.71	4.3	2.0	16	LZ
4CEYAM	56.2	57.3	57.7 L	57.9 L	57.3	-0.25	1.8	0.8	56.1	-0.87	1.5	1.4	16	TU
643ZFC	59.8	60.0	60.3	59.3	59.9	0.83	2.9	0.4	59.8	0.82	2.8	0.7	16	LD
83KT6E	64.1 *	63.8	56.9	61.4	61.5	1.51	3.5	3.3	63.0	2.27 *	3.4	2.5	16	LD
84CNU9	55.4 H	59.4	58.4	59.4	58.2	0.12	5.2	1.9	56.4	-0.69	4.5	2.6	16	MB
8URHVJ	60.8	60.8	58.9	60.2	60.2	0.95	4.1	0.9	59.0	0.47	3.4	1.5	15	LC
8ZTR2C	54.1	50.1 *	50.2 *	54.4	52.2	-2.35 *	3.8	2.3	56.8	-0.53	4.1	3.2	16	EN
9QM92T	56.8	57.9	57.8	56.7	57.3	-0.24	3.1	0.6	58.1	0.04	3.3	1.3	16	LZ
A6XC3E	51.2 *	55.0	53.2	54.4	53.4	-1.83	3.3	1.7	54.9	-1.37	3.5	1.6	16	LD
AE9ENE	60.1	57.8	58.7	58.1	58.7	0.33	5.0	1.0	56.0	-0.92	4.0	2.5	16	LD
AU279F	62.0	62.1	63.3	62.0	62.4	1.85	3.8	0.7	62.2	1.92	3.4	3.0	16	TB
BUGPQR	57.6	62.0	58.5	61.2	59.8	0.81	4.7	2.1	58.5	0.22	4.1	3.1	16	LD
CCA8VD	52.4	50.6	51.4 *	53.5	52.0	-2.44 *	4.2	1.3	54.0	-1.79	4.1	2.3	16	LD
CCR3FZ	63.3	70.2 X	66.8 *	68.2 X	67.1	3.82 X	4.3	2.9	66.3	3.75 X	4.1	1.9	16	LD
CNN633	55.5	54.3	58.0 H	56.8	56.2	-0.71	5.1	1.6	56.2	-0.83	5.1	1.6	4	LZ
CQE776	55.3	58.1	58.1	58.4	57.4	-0.18	3.2	1.4	57.4	-0.26	3.0	1.1	16	EM
CYNVJ4	57.9	57.7	57.3	58.3	57.8	-0.03	2.1	0.4	58.1	0.05	2.1	0.6	16	LD
D6Q4QW	53.5	55.8	56.5	56.6	55.6	-0.95	4.0	1.4	55.5	-1.11	4.4	1.2	16	LD
DHF2P9	57.9	56.8	62.2	59.1	59.0	0.47	2.7	2.3	58.8	0.35	3.1	2.0	16	LD
DWWYVA	60.7 L	58.6	60.0	56.6	59.0	0.46	3.5	1.8	58.5	0.22	3.5	1.3	16	LD
FKTHX4	54.3	52.5	55.8	55.8	54.6	-1.35	3.8	1.6	55.4	-1.15	3.5	2.0	16	LD
FYDZQ8	60.0	61.9	61.3	63.7 *H	61.7	1.59	4.4	1.5	60.1	0.97	3.5	1.7	16	LD
G422AX	57.4	56.0	56.8	58.8	57.3	-0.26	3.8	1.2	56.0	-0.89	4.2	1.4	16	LD
GGRYBW	58.7	56.0	54.7	57.0	56.6	-0.53	3.1	1.7	57.2	-0.37	4.0	2.3	16	LD
GJR8DK	58.1	56.9	55.5	63.6 *	58.5	0.27	4.6	3.6	60.1	0.94	4.1	2.5	16	LD
GMH9KU	54.4	52.5	54.4	51.8 *	53.3	-1.90	3.3	1.3	53.4	-2.06 *	3.4	1.6	7	TH
HJBBM7	63.2	60.3	61.4	60.1	61.3	1.40	3.6	1.4	62.0	1.80	3.2	3.3	16	LC
KAYXJ9	53.5	56.7	58.6	55.2	56.0	-0.77	4.3	2.2	56.4	-0.72	3.8	1.9	16	LZ
KRE8J9	61.2	52.6	59.6	59.3	58.2	0.13	3.9	3.8 H	61.2	1.47	4.1	4.1	15	LD



Containerboard Interlaboratory Testing Program  
Analysis 240

Report #653  
February 2024

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

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
LNAXT4	55.1	58.0	55.6	59.4	57.0	-0.35	3.2	2.0	56.2	-0.80	3.1	2.0	16	LD
LQ2W82	57.8	58.1	60.5	59.5	59.0	0.46	4.0	1.2	59.8	0.84	3.6	1.6	16	XX
M3AWFZ	54.1 L	54.8	58.9	58.1	56.5	-0.57	2.3	2.4	57.1	-0.40	2.7	1.6	15	LD
MN8MCQ	57.6	58.3	58.0	58.5	58.1	0.10	3.1	0.4	58.4	0.18	3.5	1.0	16	LD
PDYUVV	57.4	57.2	59.2	57.5	57.8	-0.03	3.5	0.9	56.6	-0.62	3.5	1.3	16	LZ
PZBTD4	58.5	58.0	59.2	59.4	58.8	0.38	3.5	0.6	58.8	0.36	3.3	1.3	16	LD
RZAHWQ	58.8 H	61.2	62.8	NO DATA	60.9	1.26	6.7	2.0	61.9	1.78	5.2	2.0	15	LD
TTKGRX	58.1 L	58.2 L	57.3 L	59.2 L	58.2	0.14	1.0	0.8	59.8	0.84	0.9	1.6	16	XX
U6UG2W	44.5 XH	49.5 *	48.6 X	48.7 XH	47.8	-4.16 X	5.7	2.2	47.8	-4.59 X	5.7	2.2	4	TC
V4G8NP	57.5	55.5 H	62.0	55.8 H	57.7	-0.09	5.7	3.0	59.5	0.69	4.5	2.4	16	TU
XKD9FE	57.4	59.7	62.9	63.5 *	60.9	1.25	3.4	2.8	59.4	0.62	4.0	4.3 H	16	LD
YUW8H4	60.1	58.4	59.6	60.3 L	59.6	0.71	3.0	0.9	58.7	0.34	2.6	1.5	16	LC
ZD7N4T	57.8	57.2	58.0	57.9	57.7	-0.07	2.2	0.4	57.0	-0.46	3.1	2.0	13	LD

Consensus (All Labs) Results										
Wk Mean	57.77	57.49	58.62	58.21	Month Mean	57.87		Grand Mean	57.98	
Avg SDr	4.17	3.57	3.68	3.63	Avg SD	3.77		Avg SD	3.61	
SD btwn Labs	3.14	3.60	3.19	2.67	SD btwn Labs	2.42		SD btwn Labs	2.21	
Labs Incl	47	47	47	44	SD btwn Wks	1.85		SD btwn Wks	2.11	
Labs Excl	1	1	1	3	Labs Incl	45		Labs Incl	45	
Labs not Rcvd	0	0	0	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 #653  
February 2024

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

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
3XNDQP	70.7	71.6	69.5	66.8	69.7	0.87	3.3	2.1	69.2	0.67	3.0	1.5	16	LC
83KT6E	70.8	69.4	63.6 L	69.6	68.4	0.57	3.0	3.2	70.2	0.91	2.5	2.4	16	LD
8URHVJ	70.6	73.8	70.8	66.2 H	70.4	1.03	5.0	3.1	70.5	0.98	4.2	2.6	15	LC
9QM92T	68.6	66.4	65.5	66.3	66.7	0.18	4.0	1.3	65.5	-0.18	3.7	1.3	16	LZ
A6XC3E	64.4	66.6	65.9	67.7	66.1	0.06	3.0	1.4	69.5	0.74	3.3	2.5	16	LD
BUGPQR	69.6	67.0	67.3	66.0	67.5	0.36	3.2	1.5	65.9	-0.07	3.3	1.9	16	LD
CCA8VD	56.7 *H	54.1 *H	56.0 *H	55.4 *	55.6	-2.38 *	7.1	1.1	55.7	-2.42 *	7.6	1.1	16	LD
CYNVJ4	68.1	67.9	68.1	67.2 L	67.8	0.45	2.1	0.4	67.2	0.22	2.2	0.6	16	LD
D6Q4QW	57.1 *H	56.7	55.3 *	55.3 *	56.1	-2.25 *	5.4	1.0	57.0	-2.12 *	6.1	1.4	16	LD
DHF2P9	68.2	69.5	68.7	73.5	70.0	0.94	4.1	2.4	70.4	0.94	4.0	2.1	16	LD
DWVYVA	67.0	63.6	64.0	66.0	65.1	-0.17	3.6	1.6	65.1	-0.26	3.3	1.5	16	LD
FYDZQ8	65.8	67.1	65.0	66.0	66.0	0.02	3.4	0.8	67.6	0.31	3.5	1.8	16	LD
G422AX	67.8	68.8	69.5	66.0	68.0	0.49	3.4	1.5	67.1	0.20	3.4	1.9	16	LD
GGRYBW	67.5	63.8	61.8	62.0	63.8	-0.49	3.2	2.6	64.5	-0.40	3.6	2.1	16	XX
LQ2W82	69.7	67.7	67.4	69.7	68.6	0.63	3.6	1.3	68.8	0.58	3.1	1.4	16	XX
PDYUVV	62.7	57.0 H	64.5 L	62.4	61.7	-0.98	4.4	3.3	62.4	-0.87	4.4	2.3	16	LZ
TTKGRX	70.3 L	69.3 L	69.3 L	71.6 L	70.1	0.97	1.4	1.1	71.2	1.14	1.1	1.4	16	XX
UQUFNV	64.2	64.9	65.1 L	64.4 L	64.6	-0.29	2.0	0.4	64.6	-0.37	2.0	0.4 L	4	LZ

Consensus (All Labs) Results														
Wk Mean	66.65	65.84	65.40	65.67	Month Mean	65.89			Grand Mean	66.25				
Avg SDr	3.95	3.99	3.53	3.89	Avg SD	3.85			Avg SD	3.84				
SD btwn Labs	4.25	5.23	4.30	4.70	SD btwn Labs	4.34			SD btwn Labs	4.37				
Labs Incl	18	18	18	18	SD btwn Wks	1.90			SD btwn Wks	1.78				
Labs Excl	0	0	0	0	Labs Incl	18			Labs Incl	18				
Labs not Rcvd	0	0	0	0										

Key to Instrument Codes Reported by Participants

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



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

**Report #653**  
**February 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	
2BUDH9	39.1 H	41.5	42.6	45.2	42.1	0.11	7.1	2.6	44.3	1.16	5.3	2.2	16	LD
38RMXF	42.3	42.5	43.6	39.6	42.0	0.07	2.8	1.7	44.1	1.07	3.4	2.3	16	LZ
3KGLNH	42.7	44.7	44.2 L	43.3	43.7	0.96	3.6	0.9	43.8	0.83	2.8	1.1	16	LD
3P8WYF	44.9 L	44.9 L	44.9 L	44.9 L	44.9	1.58	0.7	0.0 L	44.4	1.25	0.7	0.3 L	16	LD
3XNDQP	42.6 L	40.6	41.3	42.2	41.7	-0.12	2.5	0.9	42.7	0.19	2.8	2.5	16	LC
4CEYAM	38.6 L	38.9 L	38.9 L	39.2 L	38.9	-1.56	0.7	0.3	43.1	0.41	1.1	6.4 H	16	TU
84CNU9	38.4	37.5 *H	36.8 *H	38.7	37.9	-2.09 *	5.2	0.9	42.1	-0.22	4.0	2.9	16	MB
A6XC3E	43.5	42.7	43.9	44.5	43.7	0.93	2.4	0.8	44.5	1.30	3.1	1.3	16	LD
AU279F	39.0 L	38.9	39.5	39.9 L	39.3	-1.33	2.6	0.5	39.9	-1.64	2.3	1.5	16	XX
BQV3Y6	42.9	42.5	40.3	41.1	41.7	-0.09	2.8	1.2	42.5	0.02	2.9	1.2	16	LD
CCR3FZ	40.6	41.0	39.0	40.9	40.4	-0.80	2.9	0.9	39.7	-1.78	2.6	1.4	16	LD
CNN633	40.7	40.5	39.8	39.1	40.0	-0.97	3.1	0.7	40.5	-1.26	3.3	1.1	16	LD
DHF2P9	42.1 L	39.4	40.2	41.6	40.8	-0.55	2.2	1.3	41.3	-0.72	2.6	1.2	16	LD
DWWYVA	38.9	42.3	40.8	40.8	40.7	-0.62	3.5	1.4	40.5	-1.27	3.5	1.2	16	LD
GGRYBW	38.1	40.8	44.6	40.5 H	41.0	-0.46	4.4	2.7	40.6	-1.21	4.0	2.1	16	LD
GJR8DK	43.0	44.9	44.7	43.6	44.1	1.13	3.6	0.9	43.9	0.89	4.0	2.0	15	LZ
HJBBM7	39.9	40.1	40.2	41.0	40.3	-0.83	3.8	0.5	41.1	-0.85	2.9	2.3	16	XX
KRE8J9	47.4 *	45.8	44.0	40.3	44.4	1.30	4.1	3.0 H	44.1	1.02	3.9	2.6	15	EM
LNAXT4	44.3	44.3	45.3	44.6	44.6	1.42	2.8	0.5	44.7	1.40	2.7	1.3	16	LD
LQ2W82	44.1	40.1	38.0	41.8	41.0	-0.46	2.7	2.6	41.7	-0.46	3.3	1.7	16	XX
PZBTD4	44.1	41.8	43.6	42.6	43.0	0.61	3.1	1.0	42.4	-0.02	3.0	1.0	16	LD
RZAHWQ	42.7	41.9	43.1	No DATA	42.5	0.34	3.4	0.6	42.5	0.03	4.1	1.7	14	LD
U6UG2W	42.1 H	42.5 H	42.0	43.3 H	42.5	0.32	5.9	0.6	42.5	0.02	5.9	0.6 L	4	TC
W72FBV	40.4	41.8	38.9	43.8	41.2	-0.34	3.6	2.1	41.0	-0.95	2.8	1.5	16	TH
YFXZRE	27.3 XL	24.5 X	25.1 X	26.1 X	25.7	-8.41 X	1.5	1.2	25.7	-10.64 X	1.5	1.2	4	XX
ZD7N4T	45.1	44.3	44.3	44.8	44.6	1.44	2.8	0.4	43.7	0.80	3.0	1.4	16	LD

Consensus (All Labs) Results														
Wk Mean	41.90	41.84	41.77	41.97	Month Mean	41.88			Grand Mean	42.46				
Avg SDr	4.37	3.38	3.11	3.24	Avg SD	3.56			Avg SD	3.37				
SD btwn Labs	2.45	2.15	2.50	2.03	SD btwn Labs	1.92			SD btwn Labs	1.57				
Labs Incl	25	25	25	24	SD btwn Wks	1.41			SD btwn Wks	2.13				
Labs Excl	1	1	1	1	Labs Incl	25			Labs Incl	25				
Labs not Rcvd	0	0	0	1										



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

**Report #653**  
**February 2024**

**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>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

Report #653

February 2024

STFI, 26 lb Corrugating Medium - CM13

TAPPI Official Test Method T826

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
3KGLNH	14.0	14.0	14.2	13.7	14.0	0.38	1.1	0.2	13.7	0.10	1.0	0.3	16	XX
3XNDQP	13.6	13.4	13.5	13.6	13.5	-0.22	0.9	0.1	13.6	-0.13	1.0	0.3	16	LU
4CEYAM	11.8 *	12.2	12.4	12.2	12.2	-2.08 *	0.9	0.3	12.4	-2.17 *	1.0	0.4	8	XX
83KT6E	15.2	15.1 L	14.4	14.5	14.8	1.50	0.9	0.4	14.5	1.56	0.8	0.5	16	LA
84CNU9	14.3	13.9	14.4	13.9	14.1	0.63	1.1	0.3	14.2	0.87	1.2	0.4	16	LA
A6XC3E	13.7	13.5	13.1 L	13.0	13.3	-0.51	0.8	0.3	13.7	0.06	0.8	0.4	16	LA
AW8RY2	12.3	13.2 H	13.1 H	13.6	13.1	-0.84	1.5	0.5	13.1	-0.98	1.3	0.5	16	LA
BQV3Y6	13.2	14.3	13.9	14.8	14.1	0.51	1.0	0.7	14.6	1.66	1.2	0.7	16	LH
C3M7F4	15.7 *	15.1	15.2 *	14.9	15.2	2.10 *	1.1	0.3	14.5	1.50	1.1	0.6	16	LA
CNN633	12.7	13.7	13.7	13.1	13.3	-0.54	0.9	0.5	13.4	-0.54	1.0	0.4	16	LB
CQE776	12.9	12.9	13.4	13.4	13.2	-0.72	1.1	0.3	13.0	-1.11	1.0	0.4	16	LH
CYNVJ4	13.7	14.1	13.9	14.0	13.9	0.30	1.1	0.2	13.8	0.16	1.1	0.3	16	LA
D6Q4QW	13.2	12.9 H	13.4	13.0	13.1	-0.77	1.2	0.2	13.0	-1.13	1.3	0.2	16	LB
E2PHCY	14.3	14.7	14.1	13.7	14.2	0.70	1.3	0.4	13.9	0.45	1.2	0.4	16	TX
FKTHX4	13.7	14.1	13.5	13.6	13.7	0.04	1.1	0.3	13.4	-0.52	1.1	0.4	16	LU
G422AX	14.5	13.8	13.3	14.4	14.0	0.43	1.0	0.6	13.9	0.38	1.2	0.5	16	LA
GGRYBW	12.4	13.2	12.5	13.0	12.8	-1.22	1.2	0.4	13.3	-0.56	1.1	1.3 H	16	LZ
GJR8DK	13.0	12.1 *L	12.2	11.8 *	12.3	-1.91 *	1.2	0.5	12.9	-1.32	1.2	1.1 H	16	XX
M3AWFZ	13.9	13.2	13.1	13.4	13.4	-0.42	0.9	0.3	13.2	-0.84	0.9	0.2	15	LH
MPPGD2	14.1	14.5	14.1	13.9	14.1	0.62	0.9	0.2	14.0	0.53	1.1	0.4	16	LA
TFHT2P	13.8	13.3	14.5	14.6	14.0	0.48	1.0	0.6	13.6	-0.16	1.0	0.5	12	LU
TTKGRX	13.4	13.0 L	13.4	13.1	13.2	-0.65	0.6	0.2	13.9	0.50	1.0	0.6	16	XX
U6UG2W	14.5	13.0	12.7	13.2	13.4	-0.45	1.1	0.8	13.4	-0.54	1.1	0.8	4	TS
V4G8NP	14.4	14.6	15.5 *	15.3 *	15.0	1.72	1.3	0.5	14.7	1.90	1.2	0.4	16	LA
XCXPWE	13.8	14.2	13.8	13.5	13.8	0.18	1.1	0.3	13.5	-0.29	1.1	0.4	16	TT
XKD9FE	14.4	14.6	13.9	13.9	14.2	0.72	1.0	0.4	14.0	0.60	1.0	0.4	16	LH

Consensus (All Labs) Results														
Wk Mean	13.70	13.71	13.66	13.66	Month Mean	13.68			Grand Mean	13.66				
Avg SDr	1.06	1.07	1.12	1.04	Avg SD	1.07			Avg SD	1.08				
SD btwn Labs	0.88	0.81	0.80	0.80	SD btwn Labs	0.74			SD btwn Labs	0.57				
Labs Incl	26	26	26	26	SD btwn Wks	0.41			SD btwn Wks	0.55				
Labs Excl	0	0	0	0	Labs Incl	26			Labs Incl	26				
Labs not Rcvd	0	0	0	0										





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

**Report #653**  
**February 2024**

**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>TS</b>	TMI Monitor/STFI Compression Tester, 17-33
<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