

Containerboard Interlaboratory Testing Program

Participant Summary Report #655 - April 2024

[Introduction to the Containerboard Program](#)

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

Analysis	Sample	Analysis Name
<u>201</u>	<u>BX18</u>	<u>Top to Bottom Box Compression Strength, Corrugated Boxes</u>
<u>202</u>	<u>EC16</u>	<u>Edgewise Compressive Strength, by T811, Corrugated Board</u>
<u>203</u>	<u>EC16</u>	<u>Edgewise Compressive Strength by T839, Corrugated Board</u>
<u>205</u>	<u>42H3</u>	<u>Bursting Strength (Mullen), 42 lb Linerboard</u>
<u>207</u>	<u>35E3</u>	<u>Bursting Strength (Mullen), 35 lb Linerboard</u>
<u>215</u>	<u>42H3</u>	<u>Ring Crush, 42 lb Linerboard</u>
<u>217</u>	<u>35E3</u>	<u>Ring Crush, 35 lb Linerboard</u>
<u>223</u>	<u>42H3</u>	<u>STFI, 42 lb Linerboard</u>
<u>225</u>	<u>35E3</u>	<u>STFI, 35 lb Linerboard</u>
<u>228</u>	<u>42H</u>	<u>Roughness - Stylus Method, 42 lb Linerboard</u>
<u>229</u>	<u>42H3</u>	<u>Roughness - Sheffield Method, 42 lb Linerboard</u>
<u>231</u>	<u>42H</u>	<u>Internal Bond, 42 lb Linerboard</u>
<u>234</u>	<u>42H</u>	<u>COF Inclined Plane (Slide Angle), 42 lb Linerboard</u>
<u>237</u>	<u>42H</u>	<u>Air Resistance, 42 lb Linerboard</u>
<u>240</u>	<u>CM13</u>	<u>Flat Crush Strength (CMT), 26 lb Corrugating Medium</u>
<u>250</u>	<u>CM13</u>	<u>Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium</u>
<u>255</u>	<u>CM13</u>	<u>Ring Crush (RCT), 26 lb Corrugating Medium</u>
<u>261</u>	<u>CM13</u>	<u>STFI, 26 lb Corrugating Medium</u>

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.

Material	Lot Code	Dates in Use
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 #655
April 2024

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
4M7NDP	568.6	-0.44	37.48	527.2	-1.57	37.92	4	LL
6E7MUB	543.4	-1.36	51.38	569.9	-0.37	29.48	4	EX
7UGPMJ	673.8	3.39 X	18.47	673.8	2.56 *	0.00	1	LL
87L8XJ	589.4	0.32	31.80	583.9	0.03	15.45	4	LG
8BGY7F	614.1	1.22	17.86	587.9	0.14	17.68	4	EX
9K3H4K	553.8	-0.98	55.42	564.8	-0.51	25.40	3	ER
APC3NC	591.2	0.38	7.69 L	838.8	7.22 X	234.11 H	4	LG
C43MFJ	605.0	0.88	14.34	597.9	0.42	20.01	4	LG
F9L7TA	560.3	-0.74	19.44	571.2	-0.33	29.17	4	LM
FCN9E6	461.8	-4.33 X	21.22	525.9	-1.61	56.19 H	4	TB
FHCP8H	560.8	-0.72	13.48	566.4	-0.47	25.11	4	EX
GDCZ4G	559.5	-0.77	28.11	568.6	-0.41	8.81	4	ER
GGUZGB	600.6	0.72	42.54	596.4	0.38	26.92	4	LS
J2CQTC	521.5	-2.16 *	26.23	534.0	-1.38	28.17	4	LG
JKMZDA	573.6	-0.26	29.42	581.4	-0.04	8.21	4	ER
KLX6K7	609.2	1.04	34.05	609.6	0.75	10.54	4	EX
LPDYH	626.8	1.68	47.80	630.3	1.34	6.53	3	EX
LVJNHC	602.2	0.78	34.32	580.5	-0.07	37.36	4	LM
LY3MV7	552.3	-1.03	27.96	590.3	0.21	27.73	4	ET
MLBB3T	547.4	-1.21	35.99	558.7	-0.68	17.21	4	EX
QBXHY3	582.4	0.06	27.52	572.6	-0.29	27.46	4	ES
UEKBKT	577.4	-0.12	24.89	559.8	-0.65	24.89	2	LG
UX3BUX	569.6	-0.40	20.03	579.8	-0.09	25.82	4	LG
VK9D76	574.0	-0.24	22.12	556.8	-0.74	16.04	4	ER
VTX7DU	694.4	4.14 X	47.74	702.7	3.38 X	5.70	4	LS
Z4LQKM	618.1	1.36	48.88	665.8	2.34 *	32.50	4	ER
Z9FKHP	595.3	0.53	73.11 H	589.0	0.17	31.51	4	LS
ZRUZ6P	621.1	1.47	76.35 H	614.1	0.88	6.37	4	LO

Consensus (All Labs) Results			
Month Mean	580.70	Grand Mean	582.94
Avg SD	37.92	Avg SD Months	26.23
SD btwn Labs	27.48	SD btwn Labs	35.42
Labs Incl	25	Labs Incl	26



Containerboard Interlaboratory Testing Program
Analysis 201

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April 2024

Top to Bottom Box Compression Strength, Corrugated Boxes - BX18

TAPPI Official Test Method T804

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	573.44	39.30	7.25	8
Clip sealing	581.99	19.08	1.29	16
Staple sealing	618.10	0.00	37.40	1

Key to Instrument Codes Reported by Participants

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



Containerboard Interlaboratory Testing Program
 Analysis 202
Edgewise Compressive Strength, by T811, Corrugated Board - EC16
 TAPPI Official Test Method T811

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April 2024

WebCode	Monthly Results				Cumulative Results				
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
8BGY7F	51.6	0.78	0.59	L	51.6	1.00	0.00	1	TL
9K3H4K	41.6	-1.49	5.25	H	42.1	-1.41	0.66	2	EN
G882Q6	42.8	-1.22	1.75		41.7	-1.49	1.51	2	TS
GGUZGB	45.6	-0.58	3.14		46.6	-0.27	1.35	2	LD
KLX6K7	51.7	0.79	3.02		50.3	0.66	1.99	2	LC
LTCDL9	44.6	-0.81	3.20		44.6	-0.78	0.05	2	TS
MLBB3T	47.1	-0.24	2.11		47.0	-0.17	0.22	2	LC
RG8Y3	156.7	24.56 X	7.04	H	153.2	26.61 X	4.92	2	LD
UX3BUX	49.9	0.38	1.83		48.7	0.25	1.70	2	EX
YKGNCY	53.1	1.11	1.35		50.9	0.82	3.05	2	XX
ZDWT7N	53.8	1.28	1.12	L	53.1	1.38	1.02	2	XX

Consensus (All Labs) Results			
Month Mean	48.19	Grand Mean	47.66
Avg SD	2.67	Avg SD Months	1.56
SD btwn Labs	4.42	SD btwn Labs	3.97
Labs Incl	10	Labs Incl	10

Key to Instrument Codes Reported by Participants

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



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

Report #655
April 2024

WebCode	Monthly Results				Cumulative Results				
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
4F7866	49.5	-0.24	0.91		49.9	0.03	0.53	2	LD
7UGPMJ	51.1	0.17	1.22		51.6	0.44	0.63	2	BU
87L8XJ	53.1	0.66	0.69	L	53.0	0.80	0.04	2	MK
94ECRL	46.2	-1.09	1.91		46.2	-0.89	0.00	1	BU
9K3H4K	48.5	-0.51	1.94		48.7	-0.28	0.25	2	EN
AF223B	56.7	1.59	1.69		56.9	1.77	0.37	2	LC
APC3NC	48.2	-0.59	1.67		47.7	-0.52	0.64	2	EM
F9L7TA	48.2	-0.57	1.20		45.1	-1.16	4.42	2	EM
FCN9E6	49.4	-0.27	0.65	L	50.6	0.20	1.68	2	LD
FHCP8H	47.7	-0.70	3.21	H	48.1	-0.41	0.56	2	LD
G882Q6	35.2	-3.90	X 1.41		43.0	-1.69	10.99	2	TS
GDCZ4G	46.6	-0.98	2.16		46.7	-0.76	0.10	2	LD
GGUZGB	44.0	-1.66	1.71		45.6	-1.04	2.28	2	LD
GRY6DX	57.3	1.76	0.92		56.7	1.72	0.83	2	TG
JKMZDA	50.0	-0.12	1.20		49.2	-0.15	1.16	2	LD
JUCPBX	38.2	-3.15	X 3.27	H	40.9	-2.19	* 3.95	2	IX
KLX6K7	54.2	0.95	2.53		52.1	0.58	2.88	2	LC
LGHW8	54.7	1.09	1.44		54.4	1.13	0.52	2	EM
LPDYYH	55.1	1.18	1.23		55.1	1.31	0.00	1	CT
LTCDL9	45.1	-1.37	1.44		46.1	-0.92	1.39	2	TS
LVJNHC	50.8	0.08	2.55		49.0	-0.19	2.47	2	TG
LY3MV7	49.0	-0.38	2.41		48.8	-0.24	0.25	2	TD
M3V4L6	46.1	-1.13	1.36		47.9	-0.47	2.58	2	TD
MLBB3T	55.7	1.34	2.61		54.5	1.17	1.71	2	LC
QBU3M3	50.8	0.08	1.06		49.4	-0.09	1.92	2	TU
QBXHY3	53.0	0.65	1.73		50.7	0.23	3.25	2	LD
T6ZKLV	48.9	-0.40	1.54		50.4	0.15	2.09	2	TE
UEKBKT	45.0	-1.41	1.70		45.2	-1.13	0.40	2	EM
UX3BUX	47.0	-0.88	1.54		47.5	-0.57	0.65	2	LY
VK9D76	50.3	-0.04	1.29		49.5	-0.08	1.16	2	EM
VTX7DU	59.5	2.31	* 1.84		58.7	2.21	* 1.13	2	EM
WWJ4LL	49.4	-0.26	1.06		48.4	-0.34	1.46	2	TK
Y62Q6C	52.4	0.49	2.03		53.9	1.01	2.09	2	TH
YKGNCY	53.5	0.76	1.54		50.8	0.25	3.75	2	XX
Z4LQKM	55.0	1.16	2.48		55.5	1.40	0.61	2	LD
Z9FKHP	49.3	-0.31	1.09		49.3	-0.13	0.00	1	EM
ZRUZ6P	45.1	-1.38	3.11	H	45.0	-1.19	0.11	2	LD



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

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Consensus (All Labs) Results			
Month Mean	50.46	Grand Mean	49.78
Avg SD	1.79	Avg SD Months	2.64
SD btwn Labs	3.91	SD btwn Labs	4.04
Labs Incl	35	Labs Incl	37

Key to Instrument Codes Reported by Participants

BU Buchel Digital Crush Tester	CT Con-Ten
EM Emerson 1200 Series	EN Emerson 2200
IX Instron (model not specified)	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
TE TMI Monitor/Compression Tester, Model 17-60	TG TMI Digital Crush Tester, 17-76
TH TMI Monitor/Compression Tester, Model 17-76	TK TLS Compression Tester, Model 5184
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 #655
April 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	
3WGNFD	112.2 L	114.5 L	114.4 L	113.2 L	113.6	-0.63	2.6	1.1	108.6	-1.84	2.6	3.4	16	LA
4CJPLK	120.2	120.5	120.5 L	120.2 L	120.4	1.14	4.1	0.2 L	120.1	1.18	3.6	1.7	16	AH
6DVMRP	108.4	109.3	108.6	112.0	109.6	-1.68	6.3	1.7	110.1	-1.45	5.6	2.3	8	XX
6HQGPQ	114.4	109.7	112.1	114.5	112.7	-0.87	9.5	2.2	113.0	-0.69	9.0	3.0	16	XX
77VK9A_AL	114.6 H	116.3	115.5	109.3	113.9	-0.53	10.5	3.2	115.2	-0.10	10.0	3.0	16	AL
88YYTL_AL	122.5	119.6	120.2	114.2	119.1	0.82	10.1	3.5	115.9	0.09	9.6	4.0	16	AL
94HR6L	119.6	No DATA	117.4	No DATA	118.5	0.66	8.7	1.6	120.8	1.37	6.5	2.0	9	AH
9PJQRK	107.6	115.0	110.9	111.2	111.2	-1.26	8.8	3.0	112.5	-0.81	8.8	2.4	16	LC
B93TZG_AL	117.0	118.9	109.1 H	114.4	114.9	-0.30	18.6	4.3	114.8	-0.20	12.6	3.5	16	AL
BGDVLH	117.7	114.8	116.7	116.1	116.3	0.09	8.7	1.2	116.0	0.11	8.5	4.4	16	TB
CJ3JJ4_AL	122.2	115.8	121.7	121.1	120.2	1.10	8.2	3.0	119.3	0.98	9.1	3.2	12	AL
D37LVD	120.1	115.9	117.0	117.0	117.5	0.40	8.8	1.8	117.9	0.61	9.3	3.1	16	LA
D37LVD_AL	120.3 L	115.1	116.6	118.2	117.5	0.41	7.3	2.2	117.6	0.53	8.2	2.4	16	AL
D9XTDL_AL	117.2	116.8	121.9	114.4	117.5	0.41	8.9	3.1	115.8	0.06	8.6	3.0	13	AL
DD3WYE	115.6 L	115.1	114.9	116.0	115.4	-0.15	5.4	0.5	115.4	-0.06	5.1	0.5 L	16	LA
DJEKZB_AL	115.5	118.7	112.3	113.5	115.0	-0.26	9.2	2.8	112.4	-0.85	10.5	3.8	16	AL
DJT7AC	132.0 *	128.5 X	137.8 X	135.0 X	133.3	4.54 X	10.4	4.0	130.3	3.85 X	9.6	4.8	16	AX
DYQD8E	118.9	119.4	117.8	119.1	118.8	0.74	10.0	0.7	118.3	0.71	9.2	1.4	16	LB
EBFDXG	108.6	108.1	111.8	111.4	110.0	-1.57	10.9	1.9	109.6	-1.57	8.6	3.8	16	LC
EFA8VH_AL	119.6	119.8	115.5	120.0	118.7	0.72	8.2	2.1	117.6	0.53	9.5	4.1	15	AL
EPFCLD	130.0 *	109.6	111.1	115.9	116.7	0.18	9.0	9.3 H	114.0	-0.41	9.4	5.4	15	ME
FCN9E6	106.8	110.8	105.6 *	109.4	108.2	-2.05 *	7.4	2.4	108.3	-1.92	7.8	3.7	16	XX
FHCP8H	120.0	114.8	112.8	114.4	115.5	-0.13	9.1	3.1	112.4	-0.85	9.5	3.9	16	AH
FU4HE7	116.1	114.3	114.5	113.2	114.5	-0.38	5.8	1.2	115.2	-0.11	5.8	1.2	16	TP
GDCZ4G	111.3	104.9 *	112.3	111.1	109.9	-1.59	9.3	3.3	110.2	-1.41	9.6	3.2	16	LZ
GGUZGB	116.0	115.1	114.9 H	112.5	114.6	-0.35	12.9	1.5	115.7	0.03	10.4	3.4	16	LA
GVDMUF_AI	122.3	116.7	116.1	122.0	119.3	0.86	7.5	3.3	117.1	0.40	9.0	4.0	14	AL
H9WRFG	112.5 L	112.3 L	112.9 L	112.2 L	112.5	-0.91	3.3	0.3 L	112.1	-0.92	4.3	2.2	12	LA
HGEXE9_AL	118.7	122.4	124.1 *	120.7	121.5	1.44	9.9	2.3	122.7	1.87	8.0	2.2	16	AL
HKDAA9	112.7	116.5	105.9 *	107.2 *	110.6	-1.42	8.7	4.9	114.8	-0.22	10.1	4.3	16	LZ
HNBXNV_AL	117.5	115.7	117.3	115.0	116.4	0.11	8.3	1.2	116.4	0.21	8.3	1.2	4	AL
JK8GVX	116.3	115.8	116.7	114.5	115.8	-0.04	6.0	0.9	114.4	-0.32	6.4	1.5	16	LJ
JKMZDA	116.2	121.3	120.1	118.8	119.1	0.82	9.1	2.2	117.9	0.60	8.9	3.0	16	AH
LDYWJC	118.1	118.4	120.1	117.2	118.5	0.65	11.7	1.2	119.3	0.98	11.1	3.7	16	LC
LPDYYH	117.0	115.0	116.0	117.5	116.4	0.10	9.6	1.1	118.4	0.74	9.5	4.2	12	XX



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

Report #655
April 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	
LRFTY9_AL	118.2	112.0	No DATA	No DATA	115.1	-0.22	11.1	4.4	116.4	0.20	10.4	3.2	10	XX
MLBB3T	111.8	110.3 H	113.3	120.4	114.0	-0.53	10.4	4.4	112.5	-0.82	9.2	2.8	16	AH
MW9GQZ	117.8	129.3 X	124.2 *	120.9	123.1	1.86	8.7	4.9	118.2	0.67	9.7	5.0	12	LA
P6BDPM_AL	111.9	119.9	113.0	118.4	115.8	-0.05	9.9	3.9	113.7	-0.50	9.3	3.0	16	AL
PCW739	114.0	118.0	113.6	114.2	114.9	-0.27	8.9	2.0	116.9	0.33	8.8	3.0	16	XX
QBXHY3	111.8	117.3	116.1	116.5	115.4	-0.15	11.8	2.5	115.4	-0.05	10.3	3.3	16	LA
R3FAB7	118.0	120.3	117.6	118.7	118.7	0.70	9.6	1.2	121.0	1.43	10.6	3.3	16	LJ
RG8Y3	101.8 *	100.6 X	102.8 *	103.8 X	102.2	-3.60 X	10.4	1.4	103.0	-3.32 X	9.1	3.3	16	LA
RLB2W6_AL	126.5 H	119.8	123.6	119.6 H	122.4	1.67	13.5	3.3	123.8	2.15 *	11.8	3.8	16	AL
RQRAK4_AL	107.5	109.3	109.5 L	107.2 *	108.4	-2.00 *	5.5	1.2	109.2	-1.67	6.3	1.9	12	XX
T6ZKLV	119.1	121.4	116.5	116.6	118.4	0.63	10.5	2.3	117.4	0.48	10.3	2.4	16	LC
UGN74W_AL	110.4	111.8	113.6	111.6	111.8	-1.08	8.1	1.3	108.7	-1.80	12.3	3.8	16	AL
UX3BUX	126.0	124.4 *	118.6	122.2	122.8	1.79	8.5	3.2	122.4	1.80	9.1	4.0	16	AX
V6V3FW	121.0	118.7	118.2	115.7	118.4	0.63	8.7	2.2	116.4	0.22	6.5	6.6	16	LA
V8HLGU	115.0	115.5	114.0	115.7	115.1	-0.24	5.3	0.8	115.5	-0.02	5.8	1.0	16	AH
VQE8ZZ	119.8	No DATA	116.6	No DATA	118.2	0.58	5.5	2.3	117.5	0.49	6.5	1.4	8	AX
VQE8ZZ_AL	98.6 X	No DATA	110.8	No DATA	104.7	-2.95 X	9.0	8.6	113.9	-0.45	7.1	8.2 H	6	AL
WFUZYP	120.0	117.9	120.1	113.8	118.0	0.52	10.0	2.9	117.6	0.52	9.3	3.2	16	LC
WFUZYP_AL	119.6	117.9	120.1	122.8	120.1	1.08	9.4	2.1	119.1	0.91	9.9	2.1	16	AL
X8C72Y	105.7	114.6	113.5	114.1	112.0	-1.05	8.2	4.2	110.1	-1.46	8.6	3.2	14	LJ
X8C72Y_AL	126.6	120.9	129.4 X	122.7	124.9	2.34 *	9.2	3.8	123.5	2.08 *	9.8	3.2	14	AL
YKGNCY	113.3	113.7	112.0	117.3	114.1	-0.50	8.7	2.3	114.4	-0.32	8.1	1.9	12	LC
ZMY9WT	111.6 H	115.0	108.7	113.3	112.2	-1.00	11.4	2.7	114.6	-0.26	10.4	3.1	16	LA
ZPLRXQ	112.7	109.6	108.1	114.8	111.3	-1.23	10.5	3.0	111.1	-1.19	9.5	4.4	16	LA

Consensus (All Labs) Results														
Wk Mean	116.48	115.76	115.00	115.73	Month Mean	115.98			Grand Mean	115.60				
Avg SDr	9.22	8.80	10.03	8.69	Avg SD	9.20			Avg SD	8.87				
SD btwn Labs	5.82	4.07	4.66	3.86	SD btwn Labs	3.82			SD btwn Labs	3.81				
Labs Incl	58	53	56	53	SD btwn Wks	2.90			SD btwn Wks	3.42				
Labs Excl	1	3	2	2	Labs Incl	56			Labs Incl	57				
Labs not Rcvd	0	3	1	4										



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

Report #655
April 2024

Key to Instrument Codes Reported by Participants

AH	Perkins Model AH	AL	L & W Autoline 400
AX	Perkins Mullen Tester (model not specified)	LA	L&W Bursting Strength Tester
LB	L&W Burst-O-Matic	LC	L&W Autoline (205 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
ME	Messmer Automatic Burst Tester ME-06	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	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 #655
April 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	
3WGNFD	84.7 L	83.9 L	84.3 L	83.6 *	84.1	-2.34 *	2.9	0.5	85.4	-1.94 *	2.7	1.8	12	LA
4CJPLK	100.5 *L	100.2 L	100.2 *L	100.0 L	100.2	2.66 *	3.0	0.2 L	98.6	2.21 *	3.3	4.2	12	AH
6DVMRP	87.3	88.1	88.1	89.8	88.3	-1.03	6.1	1.1	89.5	-0.63	5.7	1.8	8	XX
6HQGPQ	91.1	90.0	88.7	88.1 H	89.4	-0.68	10.1	1.3	88.9	-0.84	9.0	1.7	12	XX
77VK9A_AL	94.0	85.4 L	88.0 L	87.5	88.7	-0.90	4.7	3.7	90.9	-0.22	6.5	3.4	8	AL
88YYTL_AL	93.4	91.1	88.1	92.1	91.2	-0.15	7.9	2.3	90.6	-0.32	8.6	2.3	12	AL
94HR6L	97.0	No DATA	95.0	No DATA	96.0	1.35	6.9	1.4	95.6	1.28	5.6	2.0	9	AH
9PJQRK	93.4	87.4	90.7	89.6	90.3	-0.43	5.5	2.5	89.0	-0.82	7.1	2.9	12	LA
B93TZG_AL	90.4	97.1	89.1	92.6	92.3	0.20	8.3	3.5	91.8	0.08	7.8	2.9	12	AL
BGDVLH	93.7	92.2	90.1	91.7	91.9	0.08	8.6	1.5	93.2	0.51	7.6	2.1	12	TB
CJ3JJ4_AL	91.5	81.8 *	98.7 *	91.9	91.0	-0.21	9.2	7.0 H	92.4	0.28	8.7	5.1	8	AL
D37LVD	90.8	96.0	91.8	96.0	93.7	0.63	8.0	2.7	94.1	0.80	8.7	2.0	12	LA
D37LVD_AL	92.3	92.9	90.0	91.0	91.6	-0.03	5.7	1.3	93.2	0.52	6.4	2.8	12	AL
D9XTDL_AL	91.8	No DATA	93.0 L	93.4	92.7	0.34	3.8	0.9	90.3	-0.39	7.1	3.0	11	AL
DD3WYE	91.4	91.5 L	91.9 L	90.9 L	91.4	-0.07	2.7	0.4 L	91.4	-0.05	3.0	0.5 L	12	LA
DJEKZB_AL	86.4	89.5	85.3	88.2 H	87.3	-1.34	10.0	1.9	89.9	-0.51	7.9	2.4	12	AL
DJT7AC	106.5 XH	102.8 *H	107.2 X	103.5 *	105.0	4.14 X	11.9	2.2	103.5	3.76 X	10.8	2.3	8	AX
DYQD8E	90.1	90.9	93.8	92.5	91.8	0.05	8.0	1.6	90.4	-0.37	8.1	2.9	12	LB
EBFDXG	90.4	89.5	85.6 H	93.6	89.8	-0.58	8.6	3.3	90.4	-0.37	6.9	3.2	12	LC
EFA8VH_AL	94.3	90.5	93.1	87.6	91.4	-0.09	7.2	3.0	92.0	0.13	7.5	2.4	10	AL
EPFCLD	93.0	90.9	92.8	94.9	92.9	0.39	6.8	1.6	92.9	0.42	8.7	2.0	12	ME
FCN9E6	89.4	87.9	88.6	83.8 *	87.4	-1.31	6.7	2.5	86.2	-1.69	6.1	3.0	12	XX
FHCP8H	93.6	92.4	88.0	86.4	90.1	-0.48	8.0	3.4	88.8	-0.88	8.1	3.6	12	AH
FU4HE7	92.5	92.2	90.7	91.7	91.8	0.04	4.6	0.8	91.3	-0.07	4.9	1.1	12	TP
GDCZ4G	88.0	84.8	89.1	90.3	88.1	-1.11	6.0	2.3	87.4	-1.30	7.5	2.8	12	LA
GGUZGB	90.6	87.2	94.9	92.8	91.4	-0.08	7.4	3.3	91.6	0.02	8.0	2.4	12	LA
GVDMUF_AI	86.1	96.3	94.6	91.5	92.1	0.15	6.5	4.5	90.7	-0.28	6.7	3.5	12	AL
H9WRFG	88.4	89.1	87.6 L	90.1	88.8	-0.88	3.7	1.1	88.1	-1.09	3.8	1.5	8	LA
HGEXE9_AL	94.1	90.6	97.3	96.4	94.6	0.91	8.4	3.0	96.4	1.51	6.7	3.2	12	AL
HKDAA9	95.9	91.3	94.4	96.6	94.6	0.90	5.4	2.4	94.8	1.01	6.1	3.5	12	LZ
HNBXNV_AL	89.8	94.9 H	93.0	101.3 *	94.7	0.96	8.9	4.9	94.7	1.00	8.9	4.9	4	AL
JK8GVX	91.0	90.3	92.9	91.2	91.4	-0.09	7.5	1.1	91.6	0.02	6.7	1.0	12	LJ
JKMZDA	92.4	98.5	96.3	93.7	95.2	1.11	8.7	2.7	95.3	1.18	8.4	3.2	12	AH
LDYWJC	90.7	94.6	91.6	95.5	93.1	0.44	9.2	2.3	94.4	0.90	9.8	2.5	12	LC
LPDYH	95.0	92.5	89.5	95.0	93.0	0.42	9.1	2.6	94.9	1.04	8.5	2.7	12	XX



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

Report #655
April 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
LRFTY9_AL	91.4	90.6	No DATA	No DATA	91.0	-0.19	5.9	0.5	91.0	-0.17	7.0	2.5	10	XX
MLBB3T	86.5	89.7	90.8	88.2	88.8	-0.89	7.8	1.9	89.3	-0.71	7.7	3.0	12	AH
MW9GQZ	88.2	90.3	94.2	91.3	91.0	-0.20	9.1	2.5	88.6	-0.94	7.6	3.6	8	XX
P6BDPM_AL	90.1	88.3	87.0	92.0	89.4	-0.71	7.7	2.2	87.3	-1.34	7.9	2.7	12	AL
PCW739	90.1	91.0	91.6	90.3	90.7	-0.28	8.5	0.7	91.5	-0.02	7.7	3.4	8	LA
QBXHY3	98.1	89.7	92.6	88.4	92.2	0.17	8.9	4.3	90.8	-0.25	8.1	3.1	12	LA
R3FAB7	94.9	97.5	94.5	92.8	94.9	1.02	8.0	1.9	93.5	0.61	8.3	2.2	12	LJ
RGG8Y3	83.4 *	84.2	81.7 *	76.5 X	81.4	-3.17 X	9.2	3.5	81.6	-3.12 X	8.0	2.9	12	LA
RLB2W6_AL	95.5	98.9	102.4 X	100.7 *	99.4	2.39 *	7.3	3.0	100.1	2.68 *	8.9	3.7	12	XX
RQRAK4_AL	88.1	90.7	88.7	88.2	88.9	-0.84	5.6	1.2	88.2	-1.07	6.0	1.3	8	XX
T6ZKLV	90.4	92.6	90.3	90.2	90.9	-0.24	8.8	1.2	90.0	-0.48	8.4	1.9	12	LC
UGN74W_AL	86.1	82.5	86.3	82.1 *	84.2	-2.30 *	7.2	2.3	85.4	-1.95 *	7.1	2.3	12	AL
UX3BUX	99.6 *	99.7	97.1	100.2	99.2	2.33 *	7.8	1.4	96.8	1.66	8.1	2.2	12	AH
V6V3FW	95.5	98.0	94.5	96.8	96.2	1.41	5.1	1.5	96.3	1.50	5.4	6.9 H	12	LA
V8HLGU	91.2	92.6	91.8	93.4	92.3	0.19	4.5	1.0	91.4	-0.05	5.1	1.0	12	AH
VQE8ZZ	95.4	No DATA	93.4	No DATA	94.4	0.85	6.8	1.4	93.0	0.46	5.5	1.6	7	AX
VQE8ZZ_AL	78.5 X	No DATA	81.5 *	No DATA	80.0	-3.62 X	5.0	2.1	88.5	-0.96	6.4	6.8 H	6	AL
WFUZYP	93.9	94.7	91.4	94.5	93.6	0.62	8.3	1.5	94.6	0.94	8.5	3.3	12	LC
WFUZYP_AL	94.3	94.7	91.4	95.9	94.1	0.75	8.5	1.9	95.1	1.12	9.0	2.7	12	XX
X8C72Y	84.0 *	87.2	91.1	90.2	88.1	-1.09	7.8	3.2	88.0	-1.12	7.6	2.5	10	LJ
X8C72Y_AL	91.1 H	85.2	90.1	91.8	89.6	-0.65	8.3	3.0	90.3	-0.41	7.4	2.6	10	AL
ZMY9WT	90.1	90.2	90.1	92.9	90.8	-0.26	8.4	1.4	92.2	0.21	7.4	3.7	12	LA
ZPLRXQ	87.7	82.8	93.1	91.0	88.7	-0.93	6.9	4.5	88.9	-0.85	8.2	4.0	12	LA

Consensus (All Labs) Results														
Wk Mean	91.43	91.21	91.10	92.18	Month Mean	91.65			Grand Mean	91.56				
Avg SDr	7.35	7.58	7.77	7.05	Avg SD	7.35			Avg SD	7.31				
SD btwn Labs	3.67	4.71	3.80	4.34	SD btwn Labs	3.22			SD btwn Labs	3.18				
Labs Inclcd	56	54	55	53	SD btwn Wks	2.54			SD btwn Wks	3.05				
Labs Exclcd	2	0	2	1	Labs Inclcd	55			Labs Inclcd	56				
Labs not Rcvd	0	4	1	4										



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

Report #655
April 2024

Key to Instrument Codes Reported by Participants

AH	Perkins Model AH	AL	L & W Autoline 400
AX	Perkins Mullen Tester (model not specified)	LA	L&W Bursting Strength Tester
LB	L&W Burst-O-Matic	LC	L&W Autoline (207 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
ME	Messmer Automatic Burst Tester ME-06	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	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 #655
April 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	
3WGNFD	93.8 L	93.5 L	93.4 L	92.8 L	93.4	-1.33	1.0	0.4 L	94.3	-0.41	1.6	2.0	16	TU
4CJPLK	94.8	95.6	95.1	95.1	95.2	-0.40	3.2	0.3 L	95.1	-0.11	2.3	1.6	16	LD
4U4GLJ	96.7 L	96.6	94.1	94.8 L	95.6	-0.19	1.8	1.3	96.0	0.25	1.5	1.3	12	MZ
6DVMRP	94.7	98.0	93.4	93.3	94.9	-0.55	5.3	2.2	94.9	-0.18	4.8	2.0	8	TU
77VK9A	93.9	95.5	95.8	94.3 L	94.9	-0.54	2.3	0.9	95.3	-0.01	2.4	1.3	16	LD
88YYTL	100.0 *	97.6	96.4	98.1	98.0	1.09	2.8	1.5	98.6	1.25	2.7	2.1	16	LD
9K3H4K	88.5 X	88.3 X	88.3 *	88.2 *	88.3	-3.96 X	2.5	0.1 L	91.0	-1.68	2.7	3.5	16	LC
9PJQRK	94.2	94.3 L	92.4	95.0 L	94.0	-1.02	2.7	1.1	93.2	-0.83	2.7	0.8 L	16	LD
AF223B	94.8	94.7	94.9 L	94.1	94.6	-0.67	3.0	0.4 L	94.8	-0.20	3.2	1.4	16	LC
B93TZG	96.0	95.5	97.8	96.2	96.4	0.24	4.2	1.0	95.5	0.05	4.0	2.3	16	LD
BGDVLH	94.4	96.9	93.3	92.3	94.2	-0.90	4.4	2.0	94.0	-0.50	3.6	3.7	16	LD
D37LVD	96.3	98.8	98.7	99.5	98.3	1.26	2.8	1.4	96.8	0.57	3.2	1.9	16	LD
DJEKZB	68.3 XH	68.4 XH	66.8 XH	68.3 X	67.9	-14.57 X	7.9	0.8	69.2	-10.11 X	7.7	2.2	16	LD
DJT7AC	95.8 L	83.3 XL	76.1 XL	85.1 XL	85.1	-5.65 X	0.0	8.1 H	94.3	-0.42	4.6	17.1 H	16	LD
DYQD8E	97.6	93.5	97.7	97.5	96.5	0.33	4.4	2.0	96.2	0.32	4.7	1.8	16	LD
EBFDXG	90.8 *	94.1	93.7	95.1	93.4	-1.31	5.1	1.9	93.0	-0.89	3.8	2.4	16	LD
EFA8VH	96.0	95.7	100.0	95.0	96.7	0.39	3.7	2.3	97.7	0.93	3.4	1.6	16	LC
EPFCLD	102.6 X	104.0 X	No DATA	89.4	98.7	1.42	4.7	8.1 H	102.2	2.63 *	4.2	4.8	14	LX
ER3VMB	96.6 L	95.3	95.8	95.3 L	95.8	-0.08	2.0	0.6	95.0	-0.15	2.3	2.9	12	LD
FU4HE7	95.6	92.2	94.1	93.1	93.7	-1.14	3.0	1.5	95.7	0.14	3.0	1.8	16	TX
GDCZ4G	81.3 X	80.3 XH	87.0 *	83.0 X	82.9	-6.78 X	6.7	2.9	90.5	-1.86	4.3	5.0	16	LD
GGUZGB	93.3 L	92.0	94.6	90.8	92.7	-1.69	2.7	1.6	93.7	-0.63	2.5	1.4	16	LD
GJ2HF7	96.9 L	95.5	95.3 L	94.0 L	95.4	-0.26	1.8	1.2	95.4	0.03	1.8	1.2	4	MZ
GRY6DX	97.3	97.7	96.8	98.6	97.6	0.86	3.0	0.8	97.1	0.69	2.8	1.9	16	TH
H9WRFG	93.5 L	94.5 L	94.5 L	94.2 L	94.2	-0.90	1.2	0.4 L	93.4	-0.75	1.5	1.5	12	LZ
HKDAA9	98.4	96.0	97.9	99.9	98.0	1.11	3.8	1.6	95.4	0.01	4.4	6.1	16	LC
JK8GVX	95.5	94.7 L	94.5	95.5	95.1	-0.44	2.9	0.5	95.2	-0.04	2.6	0.7 L	16	LD
JKMZDA	94.9 L	94.5	95.9	93.4	94.7	-0.65	2.5	1.0	94.6	-0.28	2.6	1.0 L	16	LD
JTL9E4	95.8	94.9	102.2	98.7	97.9	1.03	5.2	3.3	99.6	1.64	4.3	2.4	16	MB
LDYWJC	94.8	94.0	94.9 L	94.1 L	94.4	-0.77	2.1	0.5 L	94.1	-0.47	2.2	1.3	16	LD
LGHWW8	94.8	94.2	94.9	95.6	94.9	-0.55	3.6	0.6	94.8	-0.19	3.7	1.2	16	EM
MLBB3T	96.2 L	97.2 L	94.5	99.2	96.8	0.46	2.7	1.9	96.2	0.33	2.6	1.4	16	LC
NUXWJB	99.7 *	100.5 *	101.3 L	101.3	100.7	2.50 *	2.6	0.7	100.5	2.00 *	2.8	1.6	16	LD
PWJX34	96.7	97.4	No DATA	No DATA	97.1	0.59	3.2	0.5	96.4	0.41	2.9	2.0	14	LD
RF6BUY	95.1 H	97.5 H	100.7	99.5 L	98.2	1.19	6.5	2.5	100.2	1.89	6.8	3.1	16	TU



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

Report #655
April 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	
RG8Y3	97.3 H	99.9 H	99.9 H	93.2 H	97.6	0.85	20.6	3.2	98.2	1.09	21.4	2.5	16	LB
RLB2W6	77.3 XH	99.9	103.5 *	103.4 *	96.0	0.05	5.0	12.6 H	93.8	-0.59	5.6	12.2 H	16	LZ
RQRAK4	95.4	97.7	95.3	96.1	96.1	0.11	3.0	1.1	95.1	-0.08	2.9	2.0	9	LD
T6ZKLV	99.7 *	99.7	100.1	100.9	100.1	2.18 *	2.7	0.5	96.5	0.46	6.4	5.8	16	MB
UX3BUX	96.7	93.0	92.1	92.7	93.6	-1.21	2.7	2.1	95.4	0.01	2.4	2.3	16	LG
V6V3FW	89.3 X	89.4 *	90.4 L	89.2	89.6	-3.30 X	2.8	0.6	88.5	-2.64 *	3.8	4.1	16	LC
WFUZYP	91.8 *	93.0	93.0	97.5	93.8	-1.09	3.5	2.5	94.5	-0.31	3.3	4.6	16	LD
WWJ4LL	96.8 L	96.9 L	96.6 L	96.8 L	96.8	0.45	1.5	0.1 L	95.7	0.12	1.6	0.9 L	12	MB
XJNGNN	96.0	93.7	95.5	95.3	95.1	-0.42	3.8	1.0	91.2	-1.60	3.5	2.5	16	EM

Consensus (All Labs) Results												
Wk Mean	95.75	95.68	95.66	95.47	Month Mean	95.92		Grand Mean	95.34			
Avg SDr	4.51	4.62	4.67	4.85	Avg SD	4.73		Avg SD	4.76			
SD btwn Labs	1.94	2.43	3.45	3.35	SD btwn Labs	1.92		SD btwn Labs	2.59			
Labs Incd	38	39	40	40	SD btwn Wks	2.83		SD btwn Wks	4.14			
Labs Excl	6	5	2	3	Labs Incd	39		Labs Incd	43			
Labs not Rcvd	0	0	2	1								

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
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 217
Ring Crush, 35 lb Linerboard - 35E3
 TAPPI Official Test Method T822

Report #655
April 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	
3WGNFD	81.5 L	81.6 L	81.2 L	81.5 L	81.5	-0.25	1.2	0.2 L	81.3	-0.24	1.3	0.8 L	12	TU
4CJPLK	86.1	84.2	85.5	84.4	85.0	0.71	3.2	0.9	83.6	0.55	2.7	7.3 H	12	LD
4U4GLJ	83.7	84.5	84.3 L	83.6	84.0	0.44	2.6	0.4	84.4	0.81	1.9	0.7 L	8	TH
6DVMRP	78.7	79.9	79.4	78.7	79.1	-0.88	5.0	0.6	78.7	-1.07	5.4	1.5	8	TU
77VK9A	84.0	82.6	83.4	83.3	83.3	0.25	3.9	0.6	83.8	0.62	3.5	0.8 L	8	LD
88YYTL	85.5	82.9	84.5	85.4	84.6	0.58	2.5	1.2	85.3	1.11	2.6	1.3	12	LD
9K3H4K	81.5	79.9	78.5	80.0 L	80.0	-0.66	2.6	1.2	81.8	-0.05	3.3	2.3	12	LC
9PJQRK	85.1	83.6	83.6	84.9	84.3	0.51	3.4	0.8	82.7	0.23	3.4	1.5	12	LD
AF223B	85.4	83.7	81.2	79.2	82.4	-0.01	4.1	2.8	82.6	0.22	3.8	1.7	12	LC
B93TZG	81.6	82.3	83.3	81.8	82.2	-0.05	3.8	0.8	82.9	0.30	4.3	1.6	12	LD
BGDVLH	80.8	78.8	80.5	79.6	79.9	-0.67	5.7	0.9	79.4	-0.87	5.3	1.7	12	LC
D37LVD	82.2	85.8	88.7	83.4 L	85.0	0.71	3.8	2.9	84.3	0.79	3.7	2.1	12	LD
DJEKZB	59.5 XH	60.4 XH	59.5 X	62.3 XH	60.4	-5.93 X	7.4	1.3	59.3	-7.57 X	7.5	1.3	12	LD
DJT7AC	82.7 L	81.6 L	76.7 L	69.2 XL	77.5	-1.31	0.0	6.1 H	75.5	-2.17 *	3.8	8.1 H	12	LD
DYQD8E	83.1	81.4	83.1	82.4	82.5	0.03	4.5	0.8	83.5	0.52	4.5	2.8	12	LC
EBFDXG	80.9	86.0	85.6	87.0	84.9	0.67	4.7	2.7	82.6	0.22	4.2	2.4	12	LD
EFA8VH	83.6	81.5	81.3	81.5	82.0	-0.12	3.6	1.1	82.6	0.21	4.0	1.2	12	LC
EPFCLD	90.0 *H	88.1	No DATA	90.4 *	89.5	1.91	6.0	1.2	84.1	0.71	6.9	4.6	11	LX
ER3VMB	79.4 L	78.9	79.8	79.7	79.4	-0.80	2.2	0.4	82.0	0.00	2.7	2.8	8	LD
FU4HE7	81.3	83.7	83.0	82.3	82.6	0.05	3.8	1.0	81.7	-0.10	3.4	1.7	12	TX
GDCZ4G	71.3 XH	70.7 *H	70.2 *H	71.6 *H	70.9	-3.09 X	8.8	0.6	78.1	-1.28	5.9	5.4	12	LD
GGUZGB	79.4	77.1	77.3	77.8	77.9	-1.22	3.5	1.1	80.4	-0.51	3.4	2.1	12	LD
GJ2HF7	85.2 L	86.0	84.1 L	83.7	84.7	0.63	2.5	1.0	84.8	0.95	1.8	0.9 L	8	XX
GRY6DX	82.4 L	83.3	83.0	80.8	82.4	-0.01	2.9	1.1	83.4	0.49	2.7	1.3	12	TH
H9WRFG	79.1	80.0 L	81.0 L	79.7	79.9	-0.66	2.1	0.8	79.6	-0.80	2.0	1.2	8	LZ
HKDAA9	82.6	81.9	83.5	83.2	82.8	0.11	3.1	0.7	149.8	22.62 X	741.3	235.1 H	12	LC
JK8GVX	83.9	84.1	82.3	83.9	83.5	0.31	3.7	0.9	84.0	0.69	3.3	1.7	12	LD
JKMZDA	83.0	81.3 L	80.9	80.6	81.5	-0.26	2.4	1.1	82.1	0.06	2.7	1.1	12	LD
JTL9E4	83.2	83.0	89.0	83.7	84.7	0.62	4.3	2.9	85.4	1.16	4.2	2.7	12	MB
LDYWJC	79.9	83.3	80.4	80.5	81.0	-0.37	2.7	1.6	80.9	-0.35	2.7	1.6	12	LD
LGHWW8	84.0	81.1	79.7	80.9	81.4	-0.26	4.0	1.8	82.2	0.08	4.1	1.8	12	EM
MLBB3T	84.6	84.5	84.9	83.2	84.3	0.51	3.2	0.8	83.9	0.66	3.4	1.3	12	LC
NUXWJB	89.8 *	90.7 *L	94.0 *	88.4	90.7	2.24 *	3.0	2.4	88.8	2.27 *	2.8	3.5	12	LD
PWJX34	87.7	90.0	No DATA	No DATA	88.9	1.74	3.7	1.6	82.3	0.12	3.3	4.5	10	LD
RF6BUY	85.6	80.5 H	88.7	88.3	85.8	0.91	6.4	3.8 H	86.1	1.39	7.0	2.5	12	TU



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

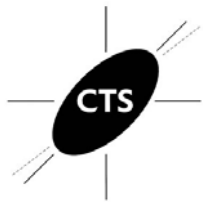
Report #655
April 2024

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	
RG8Y3	73.5 *H	71.0 *H	71.8 *H	74.7 H	72.7	-2.60 *	15.1	1.7	70.2	-3.92 X	14.1	5.1	12	LB
RLB2W6	69.4 XH	67.6 XH	66.6 XH	65.5 XH	67.3	-4.08 X	9.1	1.7	74.2	-2.58 *	6.9	11.5 H	12	LZ
RQRAK4	86.5	84.3	85.4	84.6	85.2	0.75	3.0	1.0	82.3	0.10	2.8	3.2	8	LD
T6ZKLV	86.9	87.5	89.0	86.0	87.3	1.33	3.2	1.3	83.6	0.55	4.8	4.7	12	MB
UX3BUX	82.3	82.9	83.2	80.8	82.3	-0.03	3.4	1.1	82.8	0.27	3.3	1.4	12	LG
V6V3FW	72.8 *	73.2 *	78.6	73.1 *	74.4	-2.15 *	4.0	2.8	76.6	-1.80	4.5	4.9	12	LC
WFUZYP	79.3	77.9	81.6	82.7	80.4	-0.55	3.2	2.2	79.8	-0.73	3.2	1.8	12	LD
WWJ4LL	81.7 L	81.2 L	81.5 L	81.6 L	81.5	-0.25	1.7	0.2 L	81.1	-0.30	1.7	0.5 L	8	MB
XJNGNN	75.0 *	75.2	75.5	75.6	75.3	-1.90	4.2	0.3 L	75.3	-2.24 *	4.1	0.7 L	12	EM

Consensus (All Labs) Results									
Wk Mean	82.57	81.94	82.22	81.86	Month Mean	82.40	Grand Mean	81.97	
Avg SDr	4.44	4.46	4.34	4.64	Avg SD	4.34	Avg SD	3.92	
SD btwn Labs	3.69	4.27	4.50	3.89	SD btwn Labs	3.71	SD btwn Labs	3.00	
Labs Incd	41	42	40	40	SD btwn Wks	1.81	SD btwn Wks	3.43	
Labs Excl	3	2	2	3	Labs Incd	41	Labs Incd	41	
Labs not Rcvd	0	0	2	1					

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)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program

Analysis 223

Report #655

April 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	
3TYCVQ	24.9	25.1	23.6	24.0	24.4	0.38	1.5	0.7	23.2	-0.55	1.5	1.0	12	LH
3WGNFD	22.5	22.8	22.4	21.8	22.4	-1.32	1.8	0.4	21.4	-2.23	* 1.7	0.9	16	XX
42MMHQ	25.6	25.8 L	25.6	25.0	25.5	1.32	1.4	0.4	25.2	1.22	1.5	0.3 L	16	LH
4U4GLJ	25.1 L	24.6	24.3 L	24.4 L	24.6	0.54	1.0	0.3	24.9	0.98	1.1	0.6	8	LZ
6DVMRP	24.0	23.4	24.3	24.7	24.1	0.11	2.0	0.6	23.8	-0.03	2.2	0.5	8	TT
6HQGPQ	22.0	23.3	22.7	23.0	22.8	-1.00	1.5	0.6	22.9	-0.89	1.6	0.6	16	LH
77VK9A_AL	23.9 L	24.7	23.8	24.5	24.2	0.23	2.1	0.4	23.6	-0.25	2.1	0.8	16	AL
88YYTL_AL	23.5	23.0	24.7	22.5	23.4	-0.43	1.7	0.9	23.2	-0.60	1.7	0.7	16	AL
94HR6L	25.3	No DATA	26.2	* No DATA	25.8	1.53	2.2	0.6	25.9	1.85	2.0	0.8	9	LU
9FQEF4	23.3 H	23.5	No DATA	No DATA	23.4	-0.45	2.7	0.1	22.8	-0.96	2.3	0.6	10	LH
9K3H4K	22.1 L	22.1 L	22.2	21.5	22.0	-1.66	1.4	0.3	22.1	-1.57	1.5	0.4	16	LZ
9PJQRK	22.0 H	22.4 H	23.0 H	23.8 H	22.8	-0.96	7.8	0.8	23.3	-0.49	5.7	0.8	16	LA
B7FRHN	24.2	23.8	23.2	23.6 L	23.7	-0.20	1.4	0.4	23.5	-0.32	1.4	0.5	8	XX
B93TZG_AL	24.8	24.1	25.0	24.6	24.6	0.56	1.8	0.4	24.0	0.14	1.8	0.5	16	AL
BGDVLH	22.7	23.2	23.8	22.5	23.1	-0.74	2.0	0.6	23.7	-0.09	2.1	0.8	16	LW
CJ3JJ4_AL	22.9	25.8 L	23.7	25.0	24.3	0.34	1.7	1.3	25.2	1.24	1.9	1.6	12	AL
CLMDEJ	24.9	26.1	25.9	25.6	25.6	1.41	1.9	0.5	24.7	0.77	1.8	0.8	16	XX
D37LVD_AL	23.3 L	22.9	22.9	23.6	23.2	-0.65	1.6	0.3	23.6	-0.25	1.8	0.6	16	AL
DD3WYE	23.9	24.1	23.6	23.9	23.9	-0.08	1.9	0.2	23.8	0.00	2.0	0.2 L	16	LZ
DJEKZB	22.2	23.0	22.9	23.2	22.8	-0.94	1.8	0.4	23.0	-0.82	1.9	0.6	16	LY
DJEKZB_AL	24.1	24.1	23.0	23.4	23.6	-0.26	1.9	0.5	23.1	-0.70	1.8	0.7	16	AL
DJT7AC	24.7 L	23.4 L	23.6 L	24.3 L	24.0	0.02	0.0	0.6	26.4	2.35	* 2.0	6.6 H	16	LH
DN9EXC	24.7	25.2	25.4	25.1	25.1	0.96	1.6	0.3	24.9	1.01	1.8	0.7	16	XX
DYQD8E	24.7	25.1	25.0	24.9	24.9	0.81	1.9	0.2	26.0	1.98	* 2.1	4.3 H	16	LU
EBFDXG	23.8	23.9	23.6	24.3	23.9	-0.05	2.3	0.3	23.8	-0.03	1.7	0.7	16	LA
EFA8VH	24.1	23.3	24.2	22.2	23.4	-0.42	1.6	0.9	23.5	-0.35	1.9	0.8	15	LU
EPFCLD	24.8	No DATA	30.3 XH	26.2	27.1	2.66	* 3.6	2.8 H	25.5	1.52	3.1	3.0 H	14	LZ
GDCZ4G	24.6	24.0 L	23.7	23.7	24.0	0.03	1.7	0.5	23.4	-0.42	1.7	1.1	16	LY
GGUZGB	23.0	22.9	23.0	23.1	23.0	-0.80	1.9	0.1 L	23.1	-0.66	1.7	0.4 L	16	LZ
GJ2HF7	25.0 L	25.2 L	24.7 L	24.4 L	24.8	0.75	0.8	0.3	24.8	0.91	0.8	0.3 L	4	LZ
GVDMUF	24.0	23.9	25.5	21.7	23.8	-0.14	1.9	1.5	23.4	-0.41	1.7	0.9	14	LU
HGEXE9_AL	23.3	24.4	23.9 L	23.9	23.9	-0.05	1.8	0.4	23.5	-0.31	1.7	0.6	16	AL
HKDAA9	22.7	21.7	23.2	21.0 *	22.2	-1.50	1.6	1.0	21.4	-2.27	* 1.6	1.8	16	LY
HNBXNV_AL	26.7 *	24.0	26.8 *	21.1 *	24.6	0.58	2.1	2.7 H	24.6	0.73	2.1	2.7	4	AL
JKMZDA	22.9	23.1	21.9	22.9	22.7	-1.05	1.9	0.6	23.1	-0.73	1.8	0.6	16	LU



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

Report #655
April 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	
JTL9E4	23.5	24.5	23.9	24.0	24.0	0.02	2.0	0.4	23.9	0.08	1.7	0.7	16	LA
KLHLZA	25.6	25.3	24.5	24.6	25.0	0.88	2.0	0.5	24.8	0.86	1.9	0.6	12	LU
LDYWJC	21.7	21.9	22.3	24.1	22.5	-1.20	1.7	1.1	22.6	-1.11	1.7	0.8	16	LA
LRFTY9_AL	27.1 *	26.6 *	NO DATA	NO DATA	26.8	2.42 *	2.2	0.4	25.6	1.57	1.8	2.2	10	XX
MLBB3T	22.6	23.4	23.2	23.5	23.2	-0.64	1.7	0.4	23.2	-0.61	1.7	0.4	16	LU
NUXWJB	22.3	23.6	22.6	22.3	22.7	-1.05	1.7	0.6	24.4	0.50	1.6	1.8	16	LH
P6BDPM_AL	30.1 X	29.3 X	29.2 XH	31.4 XH	30.0	5.08 X	3.1	1.0	30.4	6.06 X	2.6	0.9	16	AL
R3FAB7	25.7	25.3	25.3	24.9	25.3	1.10	2.0	0.3	24.6	0.69	2.2	0.8	16	LH
RF6BUY	25.0	24.4	23.7	25.8	24.7	0.65	2.0	0.9	25.1	1.17	1.9	0.7	15	LA
RGG8Y3	25.3	24.7	24.2	22.7	24.2	0.25	2.0	1.1	23.6	-0.25	2.1	0.9	16	LH
RLB2W6_AL	22.7	22.9	23.5	23.3 L	23.1	-0.73	1.7	0.4	22.7	-1.08	1.7	0.6	16	AL
RQRAK4_AL	22.1	23.1	23.4	23.8	23.1	-0.73	1.9	0.7	23.2	-0.64	1.9	0.6	12	XX
T6ZKLV	25.3	25.2	25.2	25.1	25.2	1.05	1.8	0.1 L	24.8	0.84	1.7	0.7	16	LA
UGN74W_AL	23.6	24.6	25.1	24.2	24.4	0.36	2.1	0.6	24.2	0.33	2.0	0.6	16	AL
UX3BUX	22.3	23.8	23.6	24.5	23.6	-0.33	1.7	0.9	23.9	0.08	1.6	0.8	16	BK
V6V3FW	23.7	24.0 L	24.3	24.1 L	24.0	0.07	1.4	0.3	24.1	0.19	1.6	0.4	16	LA
VQE8ZZ	25.0	NO DATA	24.6	NO DATA	24.8	0.70	1.8	0.3	24.7	0.80	1.7	0.4 L	8	LU
VQE8ZZ_AL	24.6	NO DATA	24.9	NO DATA	24.8	0.70	1.8	0.2	24.2	0.31	1.6	0.5	6	AL
WFUZYP	23.0 L	23.0	22.1	24.7	23.2	-0.64	1.7	1.1	23.3	-0.50	1.7	1.3	16	LZ
WFUZYP_AL	46.9 XL	46.3 XL	45.6 XL	46.6 XL	46.4	18.79 X	0.0	0.5	46.3	20.65 X	0.0	1.6	16	AL
WHZKQW	22.4	22.5	22.5	23.8 L	22.8	-0.98	1.4	0.7	22.9	-0.84	1.6	0.6	16	LW
X8C72Y	22.4	23.1	21.8	22.4	22.4	-1.27	1.6	0.5	22.4	-1.30	1.6	0.8	14	LH
X8C72Y_AL	21.6	22.8 L	20.4 X	21.9	21.7	-1.90	1.4	1.0	22.0	-1.66	1.2	1.1	12	AL
YKGCNCY	20.4 *	21.2 *	21.9 L	23.4 L	21.8	-1.84	1.5	1.3	22.3	-1.39	1.9	1.3	16	LA
Z4LQKM	27.0 *	25.5	25.1	26.2	25.9	1.67	2.0	0.8	25.1	1.18	1.7	0.9	16	LA
ZMY9WT	24.5 L	24.1	24.1	24.3	24.3	0.26	1.8	0.2	23.9	0.06	1.7	0.9	16	LY
ZPLRXQ	27.3 *H	26.0	24.7	26.0	26.0	1.73	2.4	1.1	24.8	0.88	2.2	1.0	16	LH
ZRUZ6P	23.6	24.7	23.6	23.8	23.9	-0.03	1.9	0.5	24.0	0.11	1.9	0.5	16	LH

Consensus (All Labs) Results														
Wk Mean	23.88	23.92	23.88	23.80	Month Mean	23.95	Grand Mean	23.85						
Avg SDr	1.98	2.21	1.98	2.07	Avg SD	2.10	Avg SD	1.94						
SD btwn Labs	1.46	1.18	1.15	1.24	SD btwn Labs	1.19	SD btwn Labs	1.09						
Labs Incl	61	57	57	56	SD btwn Wks	0.82	SD btwn Wks	1.40						
Labs Excl	2	2	4	2	Labs Incl	61	Labs Incl	61						
Labs not Rcvd	0	4	2	5										



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

Report #655
April 2024

Key to Instrument Codes Reported by Participants

AL	L & W Autoline 400	BK	Buchel Strip Compression Tester BK-155
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 without moisture correction	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 225
STFI, 35 lb Linerboard - 35E3
 TAPPI Official Test Method T826

Report #655
April 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	
3TYCVQ	22.8	22.8	23.6	22.8	23.0	-0.53	1.5	0.4	22.6	-1.07	1.5	0.9	12	LH
3WGNFD	21.9	21.5	22.0	21.4 *	21.7	-1.61	1.6	0.3	20.8	-2.96 X	1.8	0.8	12	XX
42MMHQ	25.1	25.0	25.0	25.3	25.1	1.11	1.5	0.2 L	25.0	1.28	1.5	0.4	12	LH
4U4GLJ	24.3 L	24.0	23.3 L	23.9 L	23.9	0.14	0.9	0.4	24.3	0.64	0.6	0.7	8	LZ
6DVMRP	23.2	24.1	23.2	24.0	23.6	-0.06	2.0	0.5	23.5	-0.24	2.1	0.5	8	TT
6HQGPQ	22.3	22.8	22.2	22.3	22.4	-1.05	1.6	0.3	22.5	-1.27	1.4	0.5	12	LH
77VK9A_AL	24.7	23.8	24.1 H	24.2	24.2	0.39	2.0	0.4	24.2	0.50	2.0	0.6	8	AL
88YYTL_AL	22.5 L	22.9	22.5	23.5 L	22.9	-0.68	1.6	0.5	23.2	-0.56	1.5	0.7	12	AL
94HR6L	25.1	NO DATA	25.1	NO DATA	25.1	1.10	2.1	0.0	25.5	1.80	2.1	0.8	9	LU
9FQEF4	20.5 *	22.1 H	NO DATA	NO DATA	21.3	-1.90	2.8	1.1	21.8	-1.95 *	2.8	0.7	6	LH
9K3H4K	21.7	21.0	21.6	21.5	21.4	-1.82	1.7	0.3	21.9	-1.87	1.6	0.5	12	LY
9PJQRK	23.0 L	22.7	23.4	23.5	23.1	-0.45	1.3	0.4	22.9	-0.81	1.5	0.5	12	LW
B7FRHN	23.5 L	23.0	21.8	22.9	22.8	-0.73	1.4	0.7	22.8	-0.93	1.4	0.7	4	XX
B93TZG_AL	24.0	24.7	24.5	23.8	24.3	0.45	1.7	0.4	24.0	0.27	1.8	0.5	12	AL
BGDVLH	31.4 X	21.9	21.8	22.4	24.4	0.54	2.3	4.7 H	23.5	-0.16	2.1	2.7 H	12	LW
CJ3JJ4_AL	23.6	26.0	23.2	24.4	24.3	0.48	1.9	1.2	25.3	1.63	2.0	1.3	8	AL
CLMDEJ	25.3	24.8	25.6	25.0	25.2	1.19	1.8	0.4	24.3	0.62	1.8	0.8	12	XX
D37LVD_AL	23.1	23.0	22.9 L	23.6	23.1	-0.45	1.4	0.3	23.4	-0.30	1.6	0.4	12	AL
DD3WYE	23.5	23.9	23.8	23.6	23.7	0.00	1.8	0.2	23.8	0.05	1.8	0.2 L	12	LA
DJEKZB	21.0	20.9	21.5 L	21.1 *	21.1	-2.05 *	1.5	0.3	22.2	-1.57	2.0	1.0	12	LY
DJEKZB_AL	22.6	21.9	22.4	21.6	22.1	-1.27	2.0	0.4	22.4	-1.31	1.9	0.6	12	AL
DJT7AC	22.5 L	23.1 L	22.8 L	22.6 L	22.7	-0.77	0.0	0.3	23.4	-0.28	1.7	0.6	12	LH
DN9EXC	26.2 H	24.7	25.0	26.3 *	25.6	1.48	1.8	0.8	24.8	1.13	1.6	0.8	12	XX
DYQD8E	24.7	24.3	24.8	24.6	24.6	0.72	1.7	0.2	25.3	1.67	1.6	0.8	12	LW
EBFDXG	25.9 H	24.4	25.9	24.0 H	25.0	1.07	2.4	1.0	24.5	0.79	2.0	0.8	12	LA
EFA8VH	24.5	22.6	24.2	22.8	23.5	-0.15	1.7	1.0	23.8	0.05	1.7	1.1	10	LU
EPFCLD	24.6	23.8	29.1 XH	23.4	25.2	1.23	3.8	2.6 H	24.7	1.03	3.0	1.8	12	LZ
GDCZ4G	23.8	25.0	23.8	24.2	24.2	0.40	1.6	0.5	23.7	0.00	1.7	0.6	12	LY
GGUZGB	23.2	23.2	22.5	23.5	23.1	-0.47	1.8	0.4	23.2	-0.54	1.7	0.4	12	LZ
GJ2HF7	25.5 L	24.2	23.6 L	24.1	24.4	0.52	1.2	0.8	24.6	0.87	0.9	0.6	8	LZ
GVDMUF	23.7	24.9	24.4	22.8	23.9	0.19	2.1	0.9	23.8	0.13	1.8	0.6	11	LU
HGEXE9_AL	23.1	23.0	23.8	23.4	23.3	-0.34	1.7	0.4	23.2	-0.54	1.7	0.5	12	XX
HKDAA9	22.3	23.1	21.6	23.6	22.6	-0.87	1.7	0.9	22.5	-1.27	2.0	1.5	12	LZ
HNBXNV_AL	27.8 *	26.1	27.3 *H	24.0	26.3	2.08 *	2.2	1.7	26.3	2.66 *	2.2	1.7	4	AL
JKMZDA	22.0	23.1	23.3	22.8	22.8	-0.75	1.8	0.6	23.2	-0.50	1.8	0.8	12	LU



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

Report #655
April 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	
JTL9E4	23.2	23.4	22.7	24.1	23.4	-0.28	1.9	0.6	24.0	0.30	2.1	0.8	12	LA
KLHLZA	24.7	24.5	24.8	24.7	24.6	0.75	1.8	0.1 L	23.9	0.15	1.9	1.0	12	LU
LDYWJC	22.4	22.1	22.6	23.5	22.6	-0.85	1.4	0.6	23.0	-0.70	1.6	0.7	12	LA
LRFTY9_AL	27.4 *	26.6 *	NO DATA	NO DATA	27.0	2.63 *	1.5	0.5	25.4	1.73	1.9	2.8 H	10	XX
MLBB3T	22.2	23.0	23.4	22.8	22.9	-0.67	1.8	0.5	23.3	-0.44	1.7	0.5	12	LU
NUXWJB	22.3	22.2	23.2	22.7	22.6	-0.90	1.5	0.5	23.9	0.22	1.7	1.1	12	LH
P6BDPM_AL	31.2 X	30.4 X	29.7 X	28.4 X	29.9	4.98 X	2.2	1.2	30.1	6.53 X	2.3	0.9	12	AL
R3FAB7	25.6	24.8	25.6	24.1 H	25.0	1.05	2.0	0.7	24.4	0.69	2.1	0.8	12	LH
RF6BUY	25.7	25.1	25.8	22.6	24.8	0.88	2.1	1.5	24.9	1.23	1.9	1.4	12	LA
RGG8Y3	24.8	20.5 *	23.5	24.0	23.2	-0.42	1.8	1.9	23.4	-0.27	1.9	1.3	12	LH
RLB2W6_AL	23.3	24.3	23.6	24.5	23.9	0.17	2.0	0.6	23.1	-0.60	1.9	0.8	12	XX
RQRAK4_AL	22.7	23.7	23.7	23.4	23.4	-0.24	1.6	0.5	23.8	0.07	1.9	0.9	8	XX
T6ZKLV	25.7	25.0	25.9	24.1	25.2	1.16	2.3	0.8	24.2	0.52	2.0	1.1	12	LA
UGN74W_AL	22.9	23.3	24.1	24.8	23.8	0.05	2.1	0.8	23.7	0.04	2.0	0.7	12	AL
UX3BUX	22.8	23.1	22.6	23.2	22.9	-0.63	1.8	0.3	23.0	-0.76	1.6	0.5	12	LW
V6V3FW	23.6	22.8	22.8	23.8	23.3	-0.37	2.3	0.5	24.1	0.41	1.9	1.0	12	LA
VQE8ZZ	25.6	NO DATA	25.3	NO DATA	25.5	1.40	1.9	0.2	24.6	0.88	1.8	0.8	7	LU
VQE8ZZ_AL	24.9	NO DATA	25.2	NO DATA	25.0	1.06	1.8	0.2	24.2	0.52	1.4	0.7	6	AL
WFUZYP	22.6	21.5	22.9	24.3	22.8	-0.74	1.8	1.1	22.7	-1.05	1.5	0.7	12	LZ
WFUZYP_AL	35.2 XL	33.4 XL	33.4 XL	35.4 XL	34.3	8.50 X	0.0	1.1	34.0	10.44 X	0.0	1.1	12	AL
WHZKQW	23.3	22.9	23.6	22.8	23.2	-0.45	1.7	0.4	22.8	-0.91	1.8	0.5	12	LW
X8C72Y	21.6	22.8	21.6	22.7	22.2	-1.21	1.6	0.7	22.7	-1.06	1.7	0.9	10	LH
X8C72Y_AL	23.3	22.4	21.0 *L	21.4 *	22.0	-1.35	1.2	1.0	22.4	-1.34	1.3	0.8	10	AL
YKGNCY	22.1	21.4 L	23.8 H	22.4	22.4	-1.03	1.8	1.0	22.5	-1.20	1.7	0.8	12	LA
Z4LQKM	25.1	24.9	24.9	24.2	24.8	0.85	1.7	0.4	24.8	1.17	1.7	1.1	12	LA
ZMY9WT	23.9	23.6 L	23.5	23.4	23.6	-0.09	1.6	0.2	22.7	-0.98	1.7	0.8	12	LU
ZPLRXQ	26.3	25.0	25.1	25.0	25.3	1.31	2.3	0.6	24.6	0.92	2.2	0.9	12	LH
ZRUZ6P	23.9	25.6	24.4 H	24.5	24.6	0.74	2.4	0.7	24.2	0.51	2.0	0.7	12	LH

Consensus (All Labs) Results														
Wk Mean	23.75	23.50	23.66	23.50	Month Mean	23.71	Grand Mean	23.70						
Avg SDr	1.84	1.87	1.77	1.77	Avg SD	1.88	Avg SD	1.83						
SD btwn Labs	1.53	1.37	1.34	1.04	SD btwn Labs	1.25	SD btwn Labs	0.98						
Labs Incl	60	58	58	56	SD btwn Wks	0.98	SD btwn Wks	0.98						
Labs Excl	3	2	3	2	Labs Incl	61	Labs Incl	60						
Labs not Rcvd	0	3	2	5										



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

Report #655
April 2024

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 - 42H
 TAPPI Official Test Method T575

Report #655
April 2024

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
9K3H4K	155.2	0.92	15.02	148.3	0.66	8.22	4	EV
9PJQRK	139.8	0.02	12.67	139.3	-0.06	5.42	4	LA
B93TZG	130.4	-0.53	17.29	146.6	0.52	22.13	4	LS
BGDVLH	119.1	-1.19	12.42	124.9	-1.20	5.64	4	XX
CJ3JJ4_AL	119.4	-1.17	12.93	123.0	-1.36	6.07	3	AL
DD3WYE	142.4	0.17	16.38	143.1	0.24	1.18	L 4	LS
DJEKZB	114.8	-1.44	10.70	114.8	-2.01 *	24.91	4	XX
DN9EXC	138.8	-0.04	19.35	146.0	0.47	8.30	4	LA
EBFDXG	126.3	-0.77	5.12	L 147.9	0.62	14.80	4	LA
GDCZ4G	148.8	0.54	13.62	156.4	1.31	17.44	4	EV
GGUZGB	132.0	-0.44	15.58	135.1	-0.39	4.51	4	LS
GVDMUF	172.3	1.91 *	14.46	159.4	1.54	17.95	4	EV
HB3ADC	119.1	-1.19	12.42	119.1	-1.67	0.00	1	EV
HGEXE9_AL	132.3	-0.42	20.06	137.8	-0.18	4.05	4	AL
HKDAA9	228.8	5.21 X	16.42	235.3	7.58 X	16.42	4	LS
HNBXNV_AL	166.3	1.56	24.22	166.3	2.09 *	0.00	1	XX
JKMZDA	144.4	0.29	6.26	L 145.5	0.43	1.64	L 4	EV
JTL9E4	133.7	-0.34	11.88	142.3	0.18	10.73	4	LA
LRFTY9_AL	156.1	0.97	23.55	156.3	1.29	3.90	3	AL
P6BDPM_AL	111.7	-1.62	12.91	136.0	-0.32	24.41	4	AL
PCW739	164.9	1.48	17.44	149.5	0.75	13.24	4	LS
R3FAB7	115.4	-1.40	11.20	121.1	-1.51	4.49	4	LS
RF6BUY	143.6	0.24	21.37	142.3	0.18	6.04	4	LA
RLB2W6_AL	158.6	1.11	10.67	126.8	-1.06	24.13	4	AL
T6ZKLV	145.9	0.37	17.13	147.7	0.61	12.76	4	LA
UGN74W_AL	155.5	0.93	15.86	140.1	0.00	16.31	4	AL
V6V3FW	127.5	-0.70	13.08	141.2	0.09	9.92	4	EV
VQE8ZZ_AL	171.9	1.89	45.79	H 136.0	-0.32	31.26	H 3	AL
WFUZYP	135.7	-0.22	13.27	77.9	-4.94 X	91.11	H 4	LA
WFUZYP_AL	141.6	0.12	14.61	149.9	0.78	23.79	4	AL
X8C72Y_AL	123.9	-0.91	10.28	123.7	-1.30	1.21	L 3	AL
ZPLRXQ	137.1	-0.14	11.65	135.3	-0.38	1.42	L 4	EV

Consensus (All Labs) Results			
Month Mean	139.49	Grand Mean	140.04
Avg SD	16.96	Avg SD Months	14.45
SD btwn Labs	17.14	SD btwn Labs	12.57
Labs Incl	31	Labs Incl	30



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

Report #655
April 2024

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 - 42H3
 TAPPI Official Test Method T538

Report #655
April 2024

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
77VK9A	364.6	-0.43	7.35		368.9	-0.23	2.99	4	PP
88YYTL_AL	374.6	0.70	8.28		373.2	0.55	4.54	4	AL
B93TZG_AL	364.8	-0.40	24.26	H	363.7	-1.17	4.54	4	AL
CJ3JJ4_AL	356.9	-1.30	7.26		361.7	-1.54	4.75	3	AL
D37LVD_AL	374.5	0.69	12.07		372.4	0.41	1.69	4	AL
DJEKZB_AL	362.2	-0.70	7.67		366.6	-0.64	3.48	4	AL
GGUZGB	380.9	1.42	16.57	H	378.0	1.41	2.91	4	XX
HGEXE9_AL	132.3	-26.80	20.06	H	132.3	-42.99	0.00	1	XX
LRFTY9_AL	367.0	-0.16	7.99		372.2	0.36	4.88	3	XX
MLBB3T	375.1	0.76	9.65		374.7	0.82	0.90	4	XX
RG8Y3	346.8	-2.45	4.36	L	345.0	-4.54	2.10	4	LA
RQRAK4_AL	371.8	0.38	5.19		375.4	0.95	3.42	3	XX
UGN74W_AL	369.5	0.13	2.64	L	364.4	-1.04	4.89	4	AL
WFUZYP_AL	368.8	0.05	8.38		368.7	-0.26	4.28	4	AL
X8C72Y_AL	34.7	-37.88	1.45	L	251.4	-21.47	187.66	3	AL
XJNGNN	368.4	0.01	5.22		364.0	-1.12	4.95	4	TS
YKGNCY	379.9	1.31	7.05		378.5	1.50	5.52	4	XX

Consensus (All Labs) Results			
Month Mean	368.39	Grand Mean	370.17
Avg SD	10.33	Avg SD Months	4.05
SD btwn Labs	8.81	SD btwn Labs	5.53
Labs Incl	15	Labs Incl	14

Key to Instrument Codes Reported by Participants

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



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

Report #655
April 2024

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
6DVMRP	115.0	-1.52	8.15	118.6	-0.98	5.18	2	TM
77VK9A	140.6	0.86	2.70	145.3	1.04	3.34	4	HY
88YYTL	143.4	1.11	6.99	142.2	0.80	2.38	4	LZ
9FQEF4	135.6	0.39	7.09	133.2	0.12	3.65	3	HY
9PJQRK	136.6	0.49	5.46	150.7	1.44	15.01	4	HY
B93TZG	120.4	-1.02	7.97	116.6	-1.13	3.10	4	TM
D37LVD	123.1	-0.76	2.46	125.1	-0.49	2.28	4	TM
DJEKZB	119.2	-1.12	4.76	123.6	-0.60	4.85	4	TM
EFA8VH	113.4	-1.66	12.72	112.5	-1.44	2.22	4	TM
FJ4MLG	134.0	0.25	8.60	131.2	-0.03	17.37	3	XX
GDCZ4G	144.5	1.22	5.96	137.6	0.45	26.47	H 4	HZ
GVDMUF	120.2	-1.03	9.86	114.5	-1.29	6.93	3	TM
JKMZDA	130.8	-0.05	1.92	129.5	-0.16	0.96	L 4	TM
LDYWJC	138.6	0.67	9.94	134.9	0.25	2.98	4	HZ
MLBB3T	147.7	1.51	7.12	147.6	1.21	1.60	4	HY
PCW739	138.4	0.65	7.02	140.2	0.65	2.57	4	HY
RLB2W6	135.2	0.36	9.73	123.5	-0.61	13.56	4	TM
RQRAK4	148.0	1.54	6.86	154.9	1.76	6.01	3	HY
UGN74W	128.6	-0.25	4.62	143.9	0.93	11.74	4	TM
V6V3FW	127.4	-0.36	3.58	123.9	-0.58	3.70	4	TM
YKGNCY	115.3	-1.48	2.08	106.8	-1.87	10.08	4	SC
ZPLRXQ	133.6	0.21	3.51	138.6	0.53	3.67	4	TM

Consensus (All Labs) Results			
Month Mean	131.35	Grand Mean	131.58
Avg SD	6.94	Avg SD Months	9.25
SD btwn Labs	10.81	SD btwn Labs	13.24
Labs Incd	22	Labs Incd	22

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	129.44	10.98	1.91	17
Modified Scott Bond Mechanics	142.57	5.61	11.23	3



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

Report #655
April 2024

Key to Instrument Codes Reported by Participants

HY	Huygen Digitized Scott Internal Bond Tester	HZ	Huygen Internal Bond Tester with AccuPress
LZ	L&W (model not specified)	SC	Scott Internal Bond Tester (Manual)
TM	TMI Monitor/Internal Bond Tester	XX	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 #655
April 2024

WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SD	Mean	CPV	SD Months	Months
77VK9A	30.2	0.90	3.63	30.2	1.21	0.71	4
88YYTL	25.9	-0.27	1.75	26.7	-0.07	1.57	4
94HR6L	30.4	0.96	2.30	30.7	1.38	1.22	3
9FQEF4	17.5	-2.57 *	1.29	23.2	-1.32	4.98 H	3
9K3H4K	25.9	-0.27	4.32	28.3	0.53	1.69	4
9PJQRK	27.2	0.08	2.68	25.9	-0.36	1.28	4
B93TZG	26.0	-0.25	3.39	24.3	-0.93	1.22	4
BGDVLH	25.8	-0.30	4.49	27.2	0.13	2.18	4
CJ3JJ4	28.6	0.47	2.20	28.7	0.67	2.43	3
D9XTDL	27.0	0.03	3.32	26.9	0.03	2.46	3
DD3WYE	27.4	0.14	0.89	27.3	0.15	0.34 L	4
DJEKZB	21.8	-1.39	2.05	23.6	-1.17	1.68	4
DJT7AC	23.4	-0.96	2.19	25.2	-0.59	3.60	4
EFA8VH	32.2	1.45	2.17	29.3	0.89	2.00	4
FU4HE7	29.6	0.74	5.21 H	29.1	0.81	1.99	4
GDCZ4G	26.6	-0.08	4.45	25.5	-0.49	4.07	4
GGUZGB	32.3	1.47	0.91	30.9	1.45	3.10	4
GVDMUF	32.8	1.61	1.30	31.5	1.69	1.10	3
HFX2LA	27.0	0.03	2.35	25.9	-0.36	2.18	4
HGEXE9	26.0	-0.25	3.24	23.3	-1.27	2.47	4
HKDAA9	29.6	0.74	1.14	29.1	0.80	0.64	4
HNBXNV	22.6	-1.18	2.19	22.6	-1.53	0.00	1
JKMZDA	28.6	0.46	2.30	26.2	-0.23	3.78	4
MLBB3T	22.2	-1.29	1.65	24.4	-0.89	1.78	4
P6BDPM	26.2	-0.19	3.56	24.5	-0.83	1.82	4
PCW739	28.8	0.52	0.84	28.7	0.67	0.12 L	4
QBJWP2	26.8	-0.03	1.30	26.2	-0.23	0.43	4
R3FAB7	19.8	-1.94 *	1.30	21.1	-2.08 *	0.93	4
RLB2W6	29.8	0.79	1.92	29.7	1.03	1.02	4
RQRAK4	27.8	0.24	1.92	29.5	0.95	2.39	3
UGN74W	31.6	1.28	4.93	29.8	1.08	1.34	4
YKGNCY	21.4	-1.50	1.14	22.6	-1.54	2.98	4
ZPLRXQ	29.0	0.57	2.35	28.0	0.40	1.66	4



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

Report #655
April 2024

Consensus (All Labs) Results			
Month Mean	26.90	Grand Mean	26.84
Avg SD	2.73	Avg SD Months	2.21
SD btwn Labs	3.66	SD btwn Labs	2.78
Labs Incl	33	Labs Incl	33

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



Containerboard Interlaboratory Testing Program
 Analysis 237
Air Resistance, 42 lb Linerboard - 42H
 TAPPI Official Test Method T460

Report #655
April 2024

WebCode	Monthly Results				Cumulative Results					
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst	
6DVMRP	32.3	-0.27	2.11		33.1	0.27	1.20	2	GA	
6WNNMR	32.1	-0.38	1.81		33.5	0.59	1.25	4	LP	
77VK9A	32.2	-0.31	2.44		33.6	0.71	2.16	4	TP	
84YNWL	33.0	0.14	2.86		30.5	-2.07 *	1.87	4	LP	
88YYTL_AL	33.4	0.42	0.86	L	34.3	1.28	1.10	4	AL	
94HR6L	34.9	1.28	2.27		33.6	0.68	1.57	3	GG	
9PJQRK	33.1	0.22	2.42		33.1	0.26	0.41	4	LP	
B93TZG_AL	32.7	0.00	1.56		32.7	-0.08	0.80	4	AL	
BGDVLH	33.5	0.47	2.09		34.2	1.18	0.44	4	LP	
CJ3J4_AL	28.5	-2.54 *	1.94		30.7	-1.86	1.98	3	AL	
D37LVD_AL	33.6	0.50	2.46		33.5	0.58	0.79	4	AL	
D9XTDL_AL	32.3	-0.28	1.50		33.2	0.35	0.96	4	AL	
DD3WYE	32.0	-0.44	1.89		32.4	-0.38	0.37	4	LP	
DJEKZB	32.2	-0.33	2.08		33.3	0.44	1.14	4	LP	
DJEKZB_AL	35.0	1.33	1.70		34.6	1.59	0.48	4	AL	
DN9EXC	32.7	-0.03	1.27		33.0	0.14	0.94	4	XX	
EBFDXG	32.5	-0.13	1.88		32.8	-0.01	1.47	4	LA	
EFA8VH_AL	33.9	0.68	2.32		33.0	0.19	1.43	4	AL	
GDCZ4G	32.6	-0.09	1.89		32.4	-0.39	0.33	4	LP	
GGUZGB	29.7	-1.81	3.40		32.4	-0.41	1.90	4	GA	
GVDMUF_AL	33.0	0.17	1.76		32.4	-0.36	0.48	4	AL	
H9WRFG	32.7	-0.02	1.49		32.5	-0.32	0.68	3	XX	
HGEXE9_AL	30.8	-1.16	1.69		30.6	-1.97 *	0.62	4	AL	
HKDAA9	26.0	-4.03 X	2.00		25.6	-6.40 X	1.01	4	XX	
HNBXNV_AL	32.2	-0.31	2.15		32.2	-0.54	0.00	1	AL	
JKMZDA	35.2	1.49	2.60		34.7	1.62	1.53	4	GA	
JTL9E4	31.1	-0.96	1.94		32.9	0.10	1.57	4	LA	
LRFTY9_AL	34.0	0.76	1.68		33.7	0.74	0.52	3	XX	
MLBB3T	33.6	0.50	4.22	H	33.2	0.30	1.61	4	TP	
NUXWJB	35.1	1.41	2.60		34.3	1.28	1.30	4	XX	
P6BDPM_AL	35.9	1.86	2.12		36.7	3.42 X	1.40	4	AL	
PCW739	33.8	0.61	1.70		32.8	0.02	0.96	4	LP	
QBJWP2	33.7	0.55	4.57	H	32.8	-0.06	1.04	4	TD	
R3FAB7	29.6	-1.88	1.75		26.6	-5.51 X	4.20	H	4	TD
RF6BUY	34.2	0.90	2.14		33.5	0.57	1.14	4	LA	
RG8Y3	31.0	-1.03	4.13	H	33.5	0.60	2.11	4	LA	
RLB2W6_AL	34.2	0.84	2.65		32.0	-0.70	1.45	4	AL	
RQRAK4	33.3	0.33	3.08		32.6	-0.24	0.96	3	TP	
RQRAK4_AL	32.0	-0.45	1.76		31.9	-0.79	0.26	3	XX	



Containerboard Interlaboratory Testing Program
Analysis 237

Report #655
April 2024

Air Resistance, 42 lb Linerboard - 42H

TAPPI Official Test Method T460

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
T6ZKLV	29.9	-1.73	1.56	30.0	-2.48 *	1.50	4	LA
UGN74W_AL	32.0	-0.44	2.86	31.9	-0.84	0.50	4	AL
VQE8ZZ	35.5	1.67	2.58	35.1	1.98 *	0.89	3	GG
VQE8ZZ_AL	31.1	-0.98	3.21	30.9	-1.67	0.21	3	AL
WFUZYYP_AL	30.1	-1.57	1.86	31.9	-0.79	1.40	4	XX
X8C72Y_AL	34.8	1.23	0.79 L	33.7	0.77	0.98	3	AL
ZPLRXQ	32.4	-0.23	1.91	32.5	-0.28	0.93	4	LP

Consensus (All Labs) Results				
Month Mean	32.74		Grand Mean	32.83
Avg SD	2.35		Avg SD Months	1.20
SD btwn Labs	1.67		SD btwn Labs	1.13
Labs Incd	45		Labs Incd	43

Key to Instrument Codes Reported by Participants

- | | | | |
|-----------|---|-----------|---|
| AL | L & W Autoline 400 | GA | Gurley Precision #4340 Automatic Densometer |
| GG | Gurley Precision #4320 Densometer | LA | L&W Autoline (237 Enrollment) |
| LP | L&W Air Permeance Tester SE 166 | TD | TMI Gurley Densometer |
| TP | Technidyne Profile/ plus Roughness & Porosity | XX | 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 #655
April 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	
3TYCVQ	60.0	58.5	58.6	59.1	59.1	0.60	3.8	0.7	58.3	0.27	3.6	0.9	12	LD
3WGNFD	54.7 L	54.3 L	54.3 L	54.3 L	54.4	-1.17	0.7	0.2 L	55.2	-1.17	1.4	1.5	16	TU
42MMHQ	54.4	55.3	54.6	55.8	55.0	-0.94	3.9	0.6	54.9	-1.28	3.3	1.3	16	LD
4U4GLJ	58.4	58.4	58.0	56.8	57.9	0.16	2.2	0.7	56.9	-0.37	1.9	1.7	8	XX
6HQGPQ	57.2	56.1	56.2	56.1	56.4	-0.43	3.0	0.5	57.1	-0.31	3.0	1.0	16	EM
6WNNMR	59.2	59.4	60.4	62.2 H	60.3	1.06	4.8	1.4	58.9	0.51	3.9	1.6	16	LD
84YNWL	58.9	57.0	56.6	58.6	57.8	0.11	3.1	1.2	58.8	0.49	3.3	1.6	16	LD
88YYTL	54.6	51.3 *	52.9	52.6	52.8	-1.77	2.2	1.3	53.8	-1.80	2.9	1.7	16	LD
9K3H4K	52.8 *	51.3 *	50.6 *H	54.6	52.3	-1.96 *	4.4	1.8	54.6	-1.45	4.2	3.0	16	EN
9PJQRK	58.0	60.9	58.6 H	57.6	58.8	0.48	5.0	1.5	59.6	0.87	4.2	1.6	16	XX
BGDVLH	60.1	60.6	61.6	61.6	61.0	1.32	4.1	0.8	60.7	1.34	3.8	1.4	16	LD
CLMDEJ	59.0	58.6	58.6	59.6	58.9	0.55	2.4	0.5	59.3	0.70	2.7	0.6	16	LD
DD3WYE	58.2	57.6	58.1	57.4 L	57.8	0.13	1.9	0.4	57.9	0.09	2.1	0.5 L	16	LD
DJEKZB	54.1	54.6	55.6	55.4	54.9	-0.98	3.5	0.7	54.9	-1.31	4.3	1.1	16	LD
DJT7AC	63.8 *L	62.0 L	61.0 L	63.9 L	62.7	1.97 *	0.0	1.4	59.7	0.90	3.6	4.5 H	16	LD
DUDDAM	61.6	60.9	64.1	64.3 *	62.7	1.99 *	2.9	1.7	62.3	2.07 *	3.1	1.6	16	TB
DYQD8E	56.0	57.9 H	57.7	58.5	57.5	0.00	4.6	1.0	58.7	0.43	4.7	1.8	16	LD
EFA8VH	59.3	59.8	63.6	60.0 L	60.7	1.21	3.6	2.0	59.9	0.97	3.8	1.5	14	LC
EPFCLD	61.7	55.8	55.7	58.4	57.9	0.15	3.2	2.8	58.8	0.50	4.1	2.6	16	LD
GDCZ4G	53.9 H	55.1	53.6	52.3	53.7	-1.44	4.5	1.2	56.1	-0.75	4.4	2.3	16	LZ
GGUZGB	56.0	59.6	57.1	55.0	56.9	-0.22	2.8	2.0	58.0	0.11	3.8	2.5	12	LZ
HGEXE9	58.1	54.7	57.2	53.8	55.9	-0.59	4.3	2.0	56.7	-0.48	4.3	1.7	16	LZ
JK8GVX	58.5	59.5	58.4	59.2	58.9	0.53	3.0	0.5	59.0	0.59	3.4	1.1	16	LD
JKMZDA	55.3	54.5	55.0	54.2	54.7	-1.05	3.5	0.5	55.0	-1.26	3.6	1.6	16	LD
KHV2YB	46.3 X	46.5 X	49.8 *	49.7 *	48.1	-3.58 X	3.8	1.9	47.4	-4.69 X	5.8	3.6	12	TC
LDYWJC	54.7	54.0	55.7	55.5 L	55.0	-0.95	2.1	0.8	56.9	-0.37	2.9	2.0	16	LD
LV3CZ7	56.1 L	57.2 L	56.3	57.0	56.6	-0.32	1.8	0.6	56.6	-0.50	2.0	0.4 L	12	TH
MDRAE4	67.4 X	65.2 *	65.8 *	66.5 *	66.2	3.31 X	5.0	1.0	67.1	4.27 X	4.8	2.2	16	TX
MLBB3T	61.8	59.8	57.0	60.4	59.7	0.85	3.2	2.0	59.1	0.60	3.9	2.2	16	LC
MW9GQZ	55.9	50.2 *	49.7 *	52.3	52.0	-2.08 *	4.0	2.8	52.9	-2.18 *	3.7	2.0	15	TH
N6G8T3	58.9	62.0	65.1 *	58.8	61.2	1.40	2.9	3.0 H	61.3	1.60	5.6	2.7	15	LD
NTPGC6	57.0	57.5	56.8	56.2	56.9	-0.23	4.1	0.5	56.4	-0.60	3.7	0.9	8	LD
NUXWJB	54.1	56.4	56.8	55.7	55.7	-0.66	3.3	1.2	56.2	-0.70	3.1	1.5	16	LD
NXHL4N	59.9	58.1	60.8	57.4 H	59.1	0.59	4.4	1.6	62.4	2.13 *	4.1	4.6 H	16	LD
PCW739	58.8	58.8	57.9	58.3	58.5	0.37	3.0	0.5	58.0	0.10	2.9	1.5	16	LD



Containerboard Interlaboratory Testing Program
Analysis 240

Report #655
April 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
QBJWP2	55.5	55.5	54.7	53.5	54.8	-1.03	3.3	0.9	55.6	-0.99	3.9	2.0	16	LZ
R8EUY3	58.7 L	58.7 L	58.7 L	58.7 L	58.7	0.45	0.8	0.0 L	58.5	0.36	0.9	0.2 L	16	LD
RF6BUY	57.7	62.2	57.8 H	58.4	59.0	0.58	4.7	2.2	58.6	0.38	4.6	2.3	16	TU
RGG8Y3	48.3 X	50.9 *	52.3	52.8	51.0	-2.45 *	4.0	2.0	52.7	-2.30 *	4.3	1.8	16	LD
RQRAK4	57.0	57.5	56.4	57.1	57.0	-0.20	4.5	0.5	57.6	-0.06	3.9	1.4	12	LD
T6ZKLV	57.0	58.9	56.9	55.1	57.0	-0.20	4.0	1.5	56.4	-0.61	4.5	2.2	16	MB
U7ACQH	56.6	59.1	51.8	59.0	56.7	-0.32	3.8	3.4 H	57.2	-0.26	3.7	2.7	16	LD
U7TT97	59.8	61.5	60.3	61.0	60.6	1.20	2.9	0.7	61.1	1.53	3.0	1.3	16	LC
UGN74W	57.0	56.8	59.5	57.5	57.7	0.08	4.1	1.2	57.2	-0.23	3.8	1.7	16	LD
UX3BUX	59.1	57.7	58.2	59.2	58.5	0.40	3.8	0.7	58.2	0.23	3.5	1.2	16	LZ
V6V3FW	56.8 L	59.8	59.9	57.8 L	58.6	0.41	2.4	1.5	58.8	0.48	2.7	1.1	16	LC
VFFAEL	58.7	59.5	62.5	61.2	60.5	1.13	4.0	1.7	60.4	1.21	4.1	3.0	16	LD
WFUZYP	55.3	58.0	57.2	56.7	56.8	-0.27	2.9	1.1	57.3	-0.20	3.7	1.9	16	LD
WWJ4LL	59.1	59.3	59.5	59.1	59.2	0.67	1.7	0.2 L	57.7	0.00	1.7	1.3	12	MB
ZMY9WT	56.9	59.4	57.5	61.1	58.7	0.47	4.7	1.9	58.3	0.24	4.4	2.8	16	LD
ZRUZ6P	56.5	59.1	57.9	60.5	58.5	0.38	3.5	1.7	58.7	0.44	4.4	1.8	16	LD

Consensus (All Labs) Results														
Wk Mean	57.55	57.73	57.47	57.60	Month Mean	57.49			Grand Mean	57.74				
Avg SDr	3.34	3.34	3.76	3.67	Avg SD	3.51			Avg SD	3.63				
SD btwn Labs	2.35	3.07	3.53	3.31	SD btwn Labs	2.64			SD btwn Labs	2.20				
Labs Incl	48	50	51	51	SD btwn Wks	1.48			SD btwn Wks	1.97				
Labs Excl	3	1	0	0	Labs Incl	49			Labs Incl	49				
Labs not Rcvd	0	0	0	0										

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 #655
April 2024

Fluted Edge Crush Strength (CFC), 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	
4U4GLJ	63.3	61.0	62.2 L	62.9 L	62.3	-1.87 *	1.7	1.0	61.8	-1.18	1.8	1.3	8	XX
6WNNMR	67.4	65.6	65.7	67.2	66.5	-0.25	2.9	0.9	65.2	-0.22	3.3	1.7	16	LD
84YNWL	71.6	72.3	73.5	70.9	72.1	1.94 *	4.3	1.1	70.9	1.36	4.0	1.7	16	LD
88YYTL	68.8	72.1	67.8	67.8	69.1	0.78	2.7	2.1	69.5	0.98	3.0	2.7	16	LD
9PJQRK	72.8 *	69.2	68.3	68.6	69.7	1.01	3.7	2.1	69.0	0.82	3.3	1.5	16	XX
BGDVLH	68.6	68.7	66.8	68.3	68.1	0.38	4.1	0.9	67.5	0.41	3.6	1.7	16	LD
DD3WYE	67.4	66.2	66.9 L	67.7	67.1	-0.03	2.3	0.7	67.3	0.34	2.2	0.6 L	16	LD
DJEKZB	57.8 XH	58.3 *	57.7 *H	56.2 *	57.5	-3.77 X	6.6	0.9	57.7	-2.31 *	5.8	1.3	16	LD
DYQD8E	65.4	68.2	66.1	67.5	66.8	-0.13	3.9	1.2	66.5	0.12	3.6	1.6	16	LD
EFA8VH	65.9	70.7	72.0	73.2 H	70.5	1.30	4.1	3.2	70.2	1.15	4.3	2.4	14	LC
H9WRFG	65.1	66.3	65.4 L	66.6 L	65.9	-0.49	1.6	0.7	65.8	-0.06	1.7	1.4	12	LZ
HGEXE9	65.5	66.3	66.5	62.4	65.2	-0.76	3.5	1.9	63.1	-0.83	4.0	2.9	16	LZ
MLBB3T	68.4	69.6	68.7	69.5	69.1	0.76	3.3	0.6	69.0	0.82	3.0	1.4	16	LC
RGG8Y3	54.9 XH	54.1 XH	54.9 *H	55.7 *H	54.9	-4.80 X	7.3	0.7	58.9	-1.98 *	8.4	7.4 H	16	LD
RQRAK4	65.3	66.1	71.5	71.9	68.7	0.62	4.1	3.5 H	68.6	0.73	3.9	2.4	12	LD
UGN74W	67.5	64.1	69.3	66.8	66.9	-0.08	4.2	2.2	67.3	0.36	3.7	1.7	16	LD
UX3BUX	64.8	64.3	64.8	65.0	64.7	-0.94	4.0	0.3	66.0	0.00	3.6	1.3	16	LZ
WFUZYP	65.5	63.8	64.9	62.3	64.1	-1.17	4.8	1.4	64.8	-0.35	4.3	2.0	16	XX
WWJ4LL	64.5	64.3	64.8 L	64.0 L	64.4	-1.07	1.7	0.3	65.4	-0.18	1.7	1.4	12	MB

Consensus (All Labs) Results									
Wk Mean	66.92	66.49	66.20	66.02	Month Mean	67.12	Grand Mean	66.03	
Avg SDr	3.41	3.69	3.96	4.09	Avg SD	3.49	Avg SD	3.95	
SD btwn Labs	2.53	3.67	4.48	4.66	SD btwn Labs	2.55	SD btwn Labs	3.58	
Labs Incl	17	18	19	19	SD btwn Wks	1.68	SD btwn Wks	2.45	
Labs Excl	2	1	0	0	Labs Incl	17	Labs Incl	19	
Labs not Rcvd	0	0	0	0					

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 #655
April 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	
3WGNFD	41.9 L	40.7 L	41.7 L	41.5 L	41.5	-0.08	0.8	0.5	39.4	-1.64	1.0	1.4	16	TU
4U4GLJ	43.0	44.1 L	44.1 L	43.6	43.7	0.98	1.6	0.5	43.5	0.80	1.7	0.5	8	TX
6WNNMR	40.3	41.2	39.4	41.1	40.5	-0.52	2.5	0.9	40.5	-0.96	3.4	1.2	16	LD
84YNWL	40.2	40.4	37.9	41.7	40.0	-0.74	2.8	1.6	40.6	-0.90	3.1	1.4	16	LD
88YYTL	44.0	43.8	42.1	43.7	43.4	0.83	3.9	0.9	43.8	0.99	3.3	1.1	16	LD
9PJQRK	42.6	40.2	38.7	41.2 H	40.7	-0.45	4.1	1.7	41.2	-0.55	3.1	1.7	16	XX
DJT7AC	41.5 L	39.6 L	37.5 L	36.7 L	38.8	-1.31	0.0	2.2	39.9	-1.36	3.6	2.1	8	XX
DUDDAM	42.3	38.4	41.0	40.6	40.6	-0.50	2.5	1.6	40.0	-1.27	2.2	1.2	16	XX
EPFCLD	43.6	43.9	40.9	34.6 *H	40.8	-0.41	3.7	4.3 H	43.5	0.85	3.9	3.1	15	LZ
GGUZGB	35.8 *	38.9	38.4	39.5	38.1	-1.64	2.9	1.6	39.9	-1.34	3.1	1.7	16	LD
GRY6DX	41.8	41.3	41.0	41.4	41.4	-0.12	2.5	0.3	41.7	-0.23	2.8	1.3	16	TH
JK8GVX	41.7	40.0	42.2	43.8	42.0	0.16	4.3	1.6	42.5	0.24	3.5	1.1	16	LD
KHV2YB	41.3 H	42.3 H	41.6 H	38.6	40.9	-0.33	5.5	1.6	42.1	0.01	6.2	1.8	12	TC
LDYWJC	42.5	43.8	43.5	44.0	43.4	0.86	2.8	0.7	43.3	0.72	2.7	1.1	16	LD
LV3CZ7	30.1 X	30.0 X	30.5 X	29.7 X	30.1	-5.42 X	2.1	0.3	33.6	-5.10 X	2.6	3.0	12	TH
MDRAE4	43.4	41.1	44.7	42.8	43.0	0.65	2.7	1.5	42.8	0.44	3.3	1.6	16	LZ
MLBB3T	45.5	42.2	39.8	40.3	42.0	0.16	3.8	2.6	42.7	0.34	3.3	2.2	16	LC
N6G8T3	41.0	44.7	46.0	40.8	43.1	0.71	3.8	2.6	42.4	0.16	3.5	1.9	15	LD
NTPGC6	45.1	44.2	44.0	42.6	44.0	1.10	3.2	1.1	44.3	1.33	2.9	0.8	8	LC
NUXWJB	47.0 *	44.8	46.3	45.0	45.8	1.96 *	2.9	1.1	45.4	1.95 *	2.8	1.1	16	LD
NXHL4N	39.4	38.1	38.4	38.8	38.7	-1.39	2.8	0.6	39.8	-1.38	2.5	1.5	16	LD
R8EUY3	45.7 L	45.7 L	45.6 L	45.5 L	45.6	1.88	0.6	0.1 L	45.0	1.76	0.7	0.4 L	16	LD
RQRAK4	46.3	44.3	42.5	42.4	43.9	1.06	2.9	1.9	44.1	1.17	3.3	2.5	12	LD
T6ZKLV	44.6	43.6	44.8	43.3	44.1	1.16	3.4	0.8	40.7	-0.86	4.1	2.8	16	MB
U7ACQH	41.4	42.5	40.8	43.3	42.0	0.18	3.3	1.1	42.5	0.26	4.8	1.9	16	LD
U7TT97	40.0 L	38.7	39.8	39.7	39.5	-0.98	1.8	0.6	40.4	-1.05	2.6	1.1	16	XX
VFFAEL	40.0	43.8	40.7	44.6	42.3	0.31	3.4	2.2	43.5	0.82	3.8	2.4	16	EM
WFUZYP	39.9	42.5	41.1	40.6	41.0	-0.28	3.3	1.1	41.3	-0.52	4.1	1.7	16	LD
WWJ4LL	41.6	41.5	41.6	41.1	41.4	-0.09	1.6	0.2 L	41.3	-0.47	1.7	0.2 L	12	MB
YVWFXM	33.8 X	37.9	37.9 H	35.9 *	36.4	-2.48 *	4.9	1.9	29.2	-7.75 X	3.3	5.5 H	12	XX
Z4LQKM	41.0	41.7	39.8	39.1	40.4	-0.57	3.4	1.2	41.9	-0.15	2.9	1.3	16	LD
ZRUZ6P	38.1	39.1	44.5	43.9	41.4	-0.10	3.2	3.3	43.5	0.83	3.3	2.1	16	LD



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

Report #655
April 2024

Consensus (All Labs) Results									
Wk Mean	42.09	41.77	41.55	41.33	Month Mean	41.62	Grand Mean	42.12	
Avg SDr	3.25	3.21	3.38	2.99	Avg SD	3.21	Avg SD	3.27	
SD btwn Labs	2.49	2.23	2.54	2.64	SD btwn Labs	2.12	SD btwn Labs	1.67	
Labs Incd	30	31	31	31	SD btwn Wks	1.68	SD btwn Wks	1.67	
Labs Excd	2	1	1	1	Labs Incd	31	Labs Incd	30	
Labs not Rcvd	0	0	0	0					

Key to Instrument Codes Reported by Participants

EM Emerson 1200 Series LD L&W Crush Tester 248 MB Messmer Buchel K440 TH TMI Compression Tester, Model 17-76 TX TMI Digital Crush Tester (model not specified)	LC L&W Crush Tester 48 LZ L&W Crush Tester (model not specified) TC TMI Monitor/Compression Tester, 17-37 TU TMI Universal Crush Tester (TMI K440) XX Instrument make/model not specified by lab
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Containerboard Interlaboratory Testing Program
 Analysis 261
STFI, 26 lb Corrugating Medium - CM13
 TAPPI Official Test Method T826

Report #655
April 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	
3HFU3J	13.8	14.1	13.7	13.6	13.8	0.35	1.1	0.2	13.9	0.43	1.1	0.4	16	TX
3WGNFD	11.7 *	11.2 X	11.8 *	12.0 *	11.7	-3.28 X	0.9	0.3	12.6	-2.02 *	1.3	0.9	16	XX
4U4GLJ	13.4 L	13.3	14.0 L	14.0	13.7	0.13	0.6	0.4	14.1	0.86	0.5	0.6	8	LZ
6HQGPQ	12.4	13.1	12.9	13.2	12.9	-1.19	0.9	0.4	13.1	-0.99	0.9	0.4	16	LH
88YYTL	12.6	13.9	13.3 L	13.2	13.3	-0.59	1.0	0.5	13.5	-0.33	0.9	0.4	16	LA
B93TZG	14.3 H	14.3	14.3	14.8	14.4	1.43	1.3	0.3	14.1	0.86	1.1	0.4	16	LA
DD3WYE	13.8	13.5	14.0	13.7	13.8	0.29	1.0	0.2	13.8	0.24	1.1	0.2	16	LA
DJEKZB	13.0	11.9 XH	12.9 H	13.5 H	12.8	-1.31	1.8	0.7	12.9	-1.44	1.5	0.4	16	LB
DJT7AC	14.5 L	13.8 L	13.9 L	13.7 L	14.0	0.62	0.0	0.4	14.6	1.77	1.1	1.8 H	16	LH
DN9EXC	13.8	13.9	14.2	14.3	14.0	0.74	1.1	0.3	14.5	1.58	0.9	0.6	16	XX
EPFCLD	13.1	No DATA	12.2	11.9 *	12.4	-2.06 *	1.4	0.6	13.1	-1.16	1.2	1.3	15	LZ
FU4HE7	13.3	13.8	12.6	14.2	13.5	-0.20	1.1	0.7	13.6	-0.09	1.1	0.6	16	TX
GGUZGB	13.1	13.0	13.3	13.9	13.3	-0.49	0.9	0.4	13.4	-0.43	1.0	0.4	16	LZ
JKMZDA	13.4	13.1	13.3	13.4	13.3	-0.50	1.2	0.1	13.4	-0.50	1.2	0.3	16	LU
JTL9E4	13.4	13.2	12.7	13.3	13.1	-0.77	1.1	0.3	13.2	-0.83	1.3	0.5	16	LA
KHV2YB	12.8	13.2	12.6	12.7	12.8	-1.33	1.1	0.3	13.0	-1.16	1.1	0.5	12	TS
KLHLZA	14.1	14.1	13.6	15.1	14.2	1.05	1.2	0.6	14.0	0.63	1.2	0.6	12	LU
LDYWJC	13.6	13.9	14.1	14.4	14.0	0.68	1.0	0.3	13.9	0.43	1.1	0.5	8	XX
MLBB3T	13.3	13.7	13.5	13.5	13.5	-0.19	1.1	0.1	13.5	-0.27	1.0	0.3	16	LU
NTPGC6	14.5 H	13.5	13.9	14.5	14.1	0.83	1.3	0.5	14.0	0.64	1.2	0.4	8	LH
PCW739	13.5	13.5	13.4 L	13.4	13.4	-0.29	0.9	0.1 L	13.3	-0.63	0.9	0.2	16	LH
RF6BUY	14.4	14.8 *	14.5	14.4	14.5	1.59	0.9	0.2	14.7	1.90	1.2	0.4	15	LA
T6ZKLV	13.8	14.3	14.3	14.5	14.2	1.09	1.1	0.3	14.2	0.96	1.1	0.3	16	LA
UGN74W	14.3	14.1	13.6	14.3	14.1	0.82	1.1	0.3	14.0	0.60	1.1	0.4	16	LA
VFFAEL	12.2 L	13.4	13.3	13.0	13.0	-1.07	0.8	0.5	13.0	-1.32	0.8	0.5	4	LH
WFUZYP	12.6	13.5	12.4 H	13.2 H	12.9	-1.15	1.9	0.5	13.4	-0.46	1.3	0.9	16	LZ
Z4LQKM	15.6 *	14.8 *	14.2	13.8	14.6	1.71	1.1	0.8	13.9	0.41	1.0	0.9	16	LH
ZRUZ6P	13.6	13.4	13.2	13.8	13.5	-0.18	1.0	0.2	13.8	0.31	1.1	0.3	16	XX

Consensus (All Labs) Results													
Wk Mean	13.50	13.72	13.41	13.68	Month Mean	13.60		Grand Mean	13.67				
Avg SDr	1.08	1.06	1.26	1.06	Avg SD	1.14		Avg SD	1.10				
SD btwn Labs	0.82	0.50	0.71	0.75	SD btwn Labs	0.59		SD btwn Labs	0.53				
Labs Incl	28	25	28	28	SD btwn Wks	0.42		SD btwn Wks	0.64				
Labs Excl	0	2	0	0	Labs Incl	27		Labs Incl	28				
Labs not Rcvd	0	1	0	0									



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

Report #655
April 2024

Key to Instrument Codes Reported by Participants

LA	L&W Autoline	LB	L&W Model 152
LH	L&W 282	LU	L&W 52 without moisture correction (was 53)
LZ	L&W (model not specified)	TS	TMI Monitor/STFI Compression Tester, 17-33
TX	TMI (model not specified)	XX	Instrument make/model not specified by lab

End of Report