



Containerboard Interlaboratory Testing Program

Participant Summary Report #630 (C) - March 2022

[Introduction to the Containerboard Program](#)

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

Analysis	Sample	Analysis Name
<u>201</u>	<u>BX16</u>	<u>Top to Bottom Box Compression Strength, Corrugated Boxes</u>
<u>202</u>	<u>EC14</u>	<u>Edgewise Compressive Strength, by T811, Corrugated Board</u>
<u>203</u>	<u>EC14</u>	<u>Edgewise Compressive Strength by T839, Corrugated Board</u>
<u>205</u>	<u>42F4</u>	<u>Bursting Strength (Mullen), 42 lb Linerboard</u>
<u>206</u>	<u>56G2</u>	<u>Bursting Strength (Mullen), 56 lb Linerboard</u>
<u>215</u>	<u>42F4</u>	<u>Ring Crush, 42 lb Linerboard</u>
<u>216</u>	<u>56G2</u>	<u>Ring Crush, 56 lb Linerboard</u>
<u>223</u>	<u>42F4</u>	<u>STFI, 42 lb Linerboard</u>
<u>224</u>	<u>56G2</u>	<u>STFI, 56 lb Linerboard</u>
<u>228</u>	<u>42F4</u>	<u>Roughness - Stylus Method, 42 lb Linerboard</u>
<u>229</u>	<u>42F4</u>	<u>Roughness - Sheffield Method, 42 lb Linerboard</u>
<u>231</u>	<u>42F</u>	<u>Internal Bond, 42 lb Linerboard</u>
<u>234</u>	<u>42F4</u>	<u>COF Inclined Plane (Slide Angle), 42 lb Linerboard</u>
<u>237</u>	<u>42F</u>	<u>Air Resistance, 42 lb Linerboard</u>
<u>240</u>	<u>CM12</u>	<u>Flat Crush Strength (CMT), 26 lb Corrugating Medium</u>
<u>250</u>	<u>CM12</u>	<u>Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium</u>
<u>255</u>	<u>CM12</u>	<u>Ring Crush (RCT), 26 lb Corrugating Medium</u>
<u>261</u>	<u>CM12</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	CM12	July 2021 - Current
	CM11	April 2019 - June 2021
35# Corrugating Medium	35E2	June 2020 - Current
	35E1	June 2017 - April 2020
42# Corrugating Medium	42F4	August 2021 - Current
	42F3	November 2020 - July 2021
56# Corrugating Medium	56G2	May 2021 - Current
	56G1	January 2020 - March 2021

ABOUT CTS

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

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EXPLANATION OF TABLES

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

Definitions of Terms Used

Weekly Results

Laboratory Data

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

Consensus Data

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

Monthly Results

Laboratory Data

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

Consensus Data

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

Cumulative Results

Laboratory Data

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

Consensus Data

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

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

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

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

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

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

Flags assigned to Weekly Means:

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

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

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



Containerboard Interlaboratory Testing Program
Analysis 201

Report #630 (C)
March 2022

Top to Bottom Box Compression Strength, Corrugated Boxes - BX16

TAPPI Official Test Method T804

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
499BGX	650.3	-0.29	26.32	653.8	-0.47	33.50	3	EX
4ZE9BG	660.0	-0.14	42.37	634.7	-0.82	24.37	3	LG
66LD6D	633.0	-0.56	56.41	662.5	-0.31	32.06	3	ER
99CU4B	654.6	-0.22	55.95	656.5	-0.42	6.80	L 3	LG
BU3U44	639.6	-0.46	19.78	678.1	-0.03	49.12	3	EX
CC4UZA	698.6	0.47	56.79	711.3	0.58	34.81	3	LO
CVNXCZ	772.8	1.63	60.12	795.7	2.12 *	29.67	3	LS
D6XK7M	767.6	1.55	35.49	758.1	1.44	15.10	3	LH
E7MA69	638.0	-0.49	35.85	660.8	-0.34	19.91	3	LM
EY2D2J	656.4	-0.20	20.03	656.4	-0.42	0.00	1	LG
GYTDE	732.1	0.99	57.65	689.0	0.17	52.72	3	LM
HMEKWR	710.8	0.66	58.60	684.8	0.09	33.79	3	ET
J9RMD9	669.3	0.01	76.35	673.7	-0.11	11.82	3	ER
JH3WWV	887.0	3.43 X	30.59	779.5	1.83	100.99	H 3	EM
KJWXJY	601.4	-1.06	37.33	633.2	-0.85	27.54	3	ES
L2QYQ2	598.4	-1.11	38.87	626.6	-0.97	30.52	3	LL
LPBARW	670.5	0.02	21.07	740.6	1.12	114.48	H 3	LG
MYC8WB	695.5	0.42	62.90	740.4	1.11	63.48	3	TB
N4MMXM	608.3	-0.95	41.63	626.5	-0.97	16.93	3	LS
N8PGZX	560.7	-1.70	14.86	556.7	-2.25 *	4.97	L 3	LL
NH8ZH9	683.0	0.22	21.00	703.7	0.44	29.19	2	EX
RAE4ZN	656.2	-0.20	47.82	696.9	0.32	46.25	3	LS
RQ4A9G	685.6	0.26	67.00	659.1	-0.38	23.25	3	LS
UYAVAG	725.7	0.89	63.68	708.9	0.54	30.86	3	TE
WEWRNG	638.8	-0.47	40.42	634.4	-0.83	14.20	3	LL
WMAWJL	587.1	-1.29	16.52	620.8	-1.08	35.74	3	ER
XQ8FJY	734.6	1.03	21.80	655.3	-0.44	68.66	3	ER
YKEXHT	568.0	-1.59	26.99	639.7	-0.73	62.95	3	EX
YNDER2	831.8	2.56 *	42.39	771.2	1.67	59.72	3	EX

Consensus (All Labs) Results

Month Mean	668.89	Grand Mean	679.61
Avg SD	45.12	Avg SD Months	46.11
SD btwn Labs	63.58	SD btwn Labs	54.68
Labs Incl	28	Labs Incl	29



Containerboard Interlaboratory Testing Program
Analysis 201

Report #630 (C)
March 2022

Top to Bottom Box Compression Strength, Corrugated Boxes - BX16

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	680.46	77.87	11.57	8
Clip sealing	664.26	58.59	4.63	20

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	ER	Emerson 6200 Series
ES	Emerson 8510	ET	Emerson 7200
EX	Emerson Apparatus (Model not specified)	LG	TLS / L.A.B. Validator Series
LH	L.A.B. Compression Tester Model #10610	LL	Lansmont 76-5K
LM	Lansmont 122-15k	LO	Lansmont 152-30k
LS	Lansmont Squeezer	TB	TMI Monitor/Compression Tester, Model 17-70
TE	Testometric M500 - 25 KN		



Containerboard Interlaboratory Testing Program
 Analysis 202
Edgewise Compressive Strength, by T811, Corrugated Board - EC14
 TAPPI Official Test Method T811

Report #630 (C)
March 2022

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
499BGX	40.9	1.14	1.71	41.2	1.34	0.58	4	LC
4NGMNH	39.0	-0.06	1.09	39.0	0.11	0.78	4	LD
99CU4B	38.7	-0.25	1.78	38.4	-0.26	0.48	4	LE
BU3U44	37.4	-1.06	1.79	38.9	0.04	1.14	4	LC
F4DMLZ	36.8	-1.48	0.76	36.6	-1.29	0.28	4	TD
PGP974	47.0	4.92	1.24	46.5	4.41	1.28	4	XX
RQ4A9G	38.5	-0.36	1.55	36.4	-1.39	1.48	4	LD
WMAWJL	40.6	0.92	3.20	39.3	0.23	1.00	4	EN
XQ8FJY	41.0	1.15	0.91	41.0	1.22	0.00	1	EM

Consensus (All Labs) Results				
Month Mean		39.12	Grand Mean	38.85
Avg SD		1.75	Avg SD Months	0.91
SD btwn Labs		1.59	SD btwn Labs	1.73
Labs Incd		8	Labs Incd	8

Key to Instrument Codes Reported by Participants

- | | |
|--|---|
| EM Emerson 1200 Series
LC L&W Crush Tester 48
LE L&W Crush Tester 840
XX Instrument make/model not specified by lab | EN Emerson 2200
LD L&W Crush Tester 248
TD TMI Digital Crush Tester, Model 17-09 |
|--|---|



Containerboard Interlaboratory Testing Program
 Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC14
 TAPPI Official Test Method T839

Report #630 (C)
March 2022

WebCode	Monthly Results				Cumulative Results					
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst	
499BGX	44.4	0.91	1.80		43.9	0.74	0.91	4	LC	
4NGMNH	41.2	-0.40	0.74	L	41.3	-0.15	1.53	4	LD	
66LD6D	40.5	-0.66	1.27		41.5	-0.10	1.15	4	LD	
7FYXZU	41.6	-0.22	0.83		41.9	0.05	0.46	3	LC	
99CU4B	42.6	0.19	1.78		41.7	0.00	1.16	4	LY	
BU3U44	39.7	-0.97	0.80		40.6	-0.38	0.64	4	LC	
BWA8UH	32.7	-3.75	2.55	X	34.6	-2.42	2.08	4	TK	
CC4UZA	39.0	-1.26	1.01		40.7	-0.36	1.31	4	LD	
CT7WBM	42.6	0.16	1.04		43.0	0.43	0.40	4	LD	
CVNXCZ	48.7	2.60	2.16	*	48.3	2.22	0.62	4	EM	
D6XK7M	39.7	-0.98	5.09	H	37.5	-1.44	2.99	4	EM	
E7MA69	40.5	-0.64	1.26		39.8	-0.66	0.54	4	EM	
EY2D2J	40.7	-0.56	1.72		40.7	-0.35	0.00	1	EM	
F4DMLZ	39.6	-1.02	0.71	L	39.0	-0.94	0.48	4	BU	
GYTDTE	42.9	0.29	1.46		43.0	0.42	1.53	4	TG	
HMEKWR	44.6	0.96	1.04		44.0	0.76	0.55	4	TD	
J9RMD9	42.1	-0.03	2.14		40.0	-0.60	2.53	4	LD	
JH3WVW	39.4	-1.10	2.39		38.8	-1.01	3.21	4	TH	
KJWXJY	41.4	-0.30	1.07		42.1	0.11	0.86	4	LD	
LPBARW	45.5	1.33	0.95		45.5	1.27	1.38	4	MK	
MQHZD6	31.5	-4.25	2.67	X	35.1	-2.25	3.05	4	TD	
MYC8WB	48.0	2.32	0.29	*	46.6	1.65	2.09	4	LD	
N4MMXM	39.7	-0.96	0.89	L	39.5	-0.75	0.36	4	EM	
N6ZYZX	44.2	0.83	2.27		44.4	0.91	1.25	4	TU	
N8PGZX	39.9	-0.90	1.84		42.6	0.30	4.24	H	4	LC
NH8ZH9	41.6	-0.21	1.39		42.4	0.23	1.39	3	TL	
NMYC9Y	41.6	-0.20	1.62		43.0	0.41	1.33	3	TS	
PGP974	45.7	1.40	1.25		46.1	1.49	1.72	4	XX	
QNJVB9	42.8	0.27	1.60		44.2	0.83	1.28	4	LC	
RJ96K8	44.6	0.96	1.04		43.8	0.69	0.88	4	TG	
RQ4A9G	41.8	-0.13	1.13		40.8	-0.31	1.48	4	LD	
WEWRNG	42.1	-0.04	0.97		41.8	0.03	0.42	4	BU	
WMAWJL	43.2	0.43	1.84		42.3	0.18	0.92	4	EN	
XGVMMA	42.9	0.29	0.95		43.6	0.64	1.34	4	LD	
YKEXHT	40.9	-0.48	1.23		39.5	-0.76	1.10	4	LD	
YNDER2	43.0	0.32	1.50		43.8	0.68	0.71	3	CT	
YYT8YN	36.6	-2.21	2.83	*	37.2	-1.55	0.58	H	3	BU



Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC14
TAPPI Official Test Method T839

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Consensus (All Labs) Results			
Month Mean	42.15	Grand Mean	41.75
Avg SD	1.70	Avg SD Months	1.62
SD btwn Labs	2.52	SD btwn Labs	2.94
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
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	TK	TLS Compression Tester, Model 5184
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 - 42F4
 TAPPI Official Test Method T807

Report #630 (C)
March 2022

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	
2FWEDG	111.0	116.9	113.4	111.5	113.2	0.77	8.3	2.7	114.2	1.34	7.4	2.2	16	LA
2FWEDG_AL	111.8	110.2	110.4	110.6	110.8	0.10	7.0	0.7	110.6	0.22	7.1	2.0	16	AL
499BGX	109.0	118.6 *	110.3	109.8	111.9	0.42	9.1	4.5	112.6	0.85	9.0	2.9	16	AH
4G2LTE	113.9	110.4	109.5	113.3	111.8	0.37	8.1	2.1	111.5	0.51	9.7	2.9	12	LZ
4NGMNH	108.2	112.1	105.8 L	105.5 L	107.9	-0.70	4.9	3.0	109.4	-0.15	6.4	2.4	16	LA
4WE4G9	109.6	110.4	112.2	108.7	110.2	-0.05	6.0	1.5	110.5	0.18	6.1	1.7	16	TP
66LD6D	119.1 *	115.6	120.7 *	107.9	115.8	1.50	7.2	5.7	112.5	0.82	8.1	7.2 H	16	AH
67ZH2Q_AL	110.9	108.7	112.3	107.2	109.8	-0.17	8.5	2.3	110.2	0.08	7.1	1.8	16	AL
7L79B9	100.8 *	102.7	100.9 *	98.7 *L	100.8	-2.66 *	8.1	1.6	103.6	-1.96 *	7.8	4.9	16	LC
84H92N	102.0 *	107.2	103.3	105.9	104.6	-1.61	7.6	2.4	105.3	-1.44	8.1	2.7	16	XX
86GDHH_AL	111.8	111.5	112.2	113.4	112.2	0.50	9.1	0.8	110.9	0.31	8.9	4.5	16	AL
8H2XZQ_AL	110.8	113.5	110.5	112.8 H	111.9	0.41	11.3	1.5	112.5	0.81	9.1	2.0	12	AL
8MU6D8	125.5 X	127.0 X	128.7 X	126.3 X	126.9	4.55 X	8.5	1.4	125.7	4.93 X	10.5	3.4	16	AC
8P2DND	102.7	106.1	103.6	99.9 *	103.1	-2.02 *	7.5	2.6	105.4	-1.41	7.7	4.0	16	ME
99CU4B	116.1	110.8	113.5	113.1	113.4	0.82	6.7	2.2	112.2	0.73	6.6	1.9	16	AH
A33TMD	113.8	No DATA	No DATA	No DATA	113.8	0.94	10.0	0.0	108.5	-0.43	8.8	5.3	13	AH
A33TMD_AL	107.8	No DATA	No DATA	109.3	108.6	-0.51	11.0	1.1	111.5	0.50	11.0	3.4	14	AL
AE923B	111.1 L	110.9	116.4	119.7 *	114.5	1.14	5.0	4.3	113.2	1.03	5.2	3.2	16	LA
B8RPMN_AL	112.4	110.8 H	111.8	111.7 L	111.7	0.35	9.5	0.7	113.0	0.97	8.3	3.1	16	AL
CT7WBM_AL	114.6	115.0	115.0	111.3	114.0	0.99	6.5	1.8	113.0	0.96	6.2	5.2	16	AK
CTQB47	113.6	115.4	110.4	115.1	113.6	0.89	9.6	2.3	113.2	1.02	9.3	3.0	16	LA
CVRNGX	109.8	106.7	112.6	105.8	108.7	-0.46	9.3	3.1	107.9	-0.62	8.3	2.6	16	LC
DDL2F2V	122.8 X	119.1 *	120.7 *	115.2	119.5	2.50 *	10.5	3.2	121.7	3.66 X	9.0	3.7	16	AX
DFB3G6	110.1	105.4	106.3	103.6	106.4	-1.12	7.6	2.8	101.5	-2.63 *	8.1	4.7	16	LC
DQTJ9B	110.2	108.0	109.0	108.8	109.0	-0.39	8.1	0.9	107.0	-0.90	7.8	2.6	16	LC
DQUERG_AL	111.0	109.3 H	108.9	98.8 *	107.0	-0.94	9.5	5.5	109.0	-0.27	9.1	4.9	16	AL
EGL634_AL	116.8	109.8	113.3	111.9	113.0	0.71	6.8	2.9	113.3	1.04	6.5	2.5	16	AL
F4DMLZ	108.0	106.7	105.9	108.9	107.4	-0.84	11.3	1.3	108.3	-0.51	11.5	2.0	16	XX
G6F9NQ	127.3 XL	127.6 XL	128.2 X	128.7 X	128.0	4.85 X	3.5	0.6	131.4	6.71 X	4.0	3.5	16	AH
GB87JA_AL	108.7	108.2	111.3	112.3	110.1	-0.07	6.7	2.0	110.2	0.09	7.1	2.6	16	AL
GEA99B	118.7 *	115.5	115.2	114.6	116.0	1.55	11.2	1.8	114.2	1.34	8.7	2.7	16	LC
GRCML2	104.8	107.4	108.7	105.1	106.5	-1.08	7.9	1.9	105.4	-1.42	8.4	2.3	16	LA
GWDJF3	111.2	No DATA	No DATA	No DATA	111.2	0.22	6.0	0.0	113.6	1.16	5.1	3.4	12	AH
GYV3XB	110.0 L	110.8 L	111.7	110.5	110.8	0.10	3.9	0.7	109.7	-0.06	3.1	1.4	16	LA
H6Y8MA	110.9	111.1	110.7	110.6	110.8	0.12	4.8	0.2 L	110.8	0.26	5.5	0.6 L	16	LJ



Containerboard Interlaboratory Testing Program
 Analysis 205
Bursting Strength (Mullen), 42 Ib Linerboard - 42F4
 TAPPI Official Test Method T807

Report #630 (C)
March 2022

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	
HE2L99	110.9	113.6 H	111.8	106.1	110.6	0.05	9.5	3.2	108.3	-0.50	9.4	2.8	16	LA
HWKHP2	108.8	107.2	111.6	111.8	109.8	-0.16	9.3	2.3	109.1	-0.27	9.8	2.3	12	LB
J9RMD9	111.6	105.0	104.4	110.1	107.8	-0.73	9.2	3.6	106.5	-1.06	9.1	2.4	16	LZ
JBLBV6	110.4	No DATA	No DATA	No DATA	110.4	0.00	7.8	0.0	111.5	0.50	6.3	2.7	11	AX
JBLBV6_AL	88.0 X	No DATA	No DATA	107.8	97.9	-3.46 X	6.5	14.0	106.6	-1.03	7.2	6.9 H	10	AL
JL363Q	112.5	112.6	113.0 L	113.1 L	112.8	0.66	3.7	0.3 L	112.9	0.92	3.9	0.5 L	16	LA
KJWXJY	111.7	112.9	108.8	110.8	111.1	0.18	10.0	1.7	109.3	-0.21	9.3	2.5	16	LA
MBPBH9	105.3	110.0	116.5	113.1 H	111.2	0.22	10.8	4.8	110.7	0.24	11.2	3.8	16	LJ
NCXPJM	110.3	108.4	110.3	110.5	109.9	-0.15	7.0	1.0	110.6	0.22	7.1	1.4	16	AH
NDEYFU	100.4 *	94.8 XH	111.2	109.3	103.9	-1.79	11.7	7.7 H	106.3	-1.12	9.7	7.6 H	15	TB
NGDACU_AL	111.4 L	107.6	107.9	108.4	108.8	-0.44	5.5	1.8	107.7	-0.68	5.6	2.1	16	XX
NHJWPY	97.0 X	100.1 *	95.0 X	97.4 *	97.4	-3.60 X	8.5	2.1	98.4	-3.58 X	8.3	2.4	16	LA
NN9CD7_AL	111.3	110.7	110.8	112.3	111.3	0.24	7.4	0.7	109.4	-0.16	9.3	3.7	14	AL
PGP974	114.5	115.3	115.5	114.2 L	114.9	1.23	5.9	0.6	114.8	1.51	5.5	1.4	16	LC
Q3HMBR_AL	118.3	115.7	120.1 *	113.8	117.0	1.82	8.6	2.8	116.8	2.14 *	8.7	4.8	16	AK
Q8G4ML	117.5	109.6	113.9	114.9	114.0	0.99	9.5	3.3	113.0	0.95	9.0	2.5	16	LC
Q8G4ML_AL	110.3	112.0	114.0	121.7 *	114.5	1.13	10.0	5.0	113.2	1.04	9.5	2.8	16	AL
QJD3HX	111.5	109.9	110.6	105.6	109.4	-0.28	7.0	2.6	108.7	-0.36	7.9	4.5	16	TP
QJD3HX_AL	106.2	102.2	102.5	102.2	103.3	-1.97 *	6.2	2.0	103.3	-2.07 *	6.2	2.0	4	XX
RQ4A9G	112.1	107.6	113.0	111.0	110.9	0.15	10.4	2.4	110.4	0.16	9.4	2.5	16	LA
TVEFQ9_AL	110.0	104.8	110.2	109.8	108.7	-0.47	8.1	2.6	108.6	-0.40	8.3	3.2	12	AL
U3AY8U_AL	115.7	112.9	108.0 L	114.6	112.8	0.66	6.0	3.4	112.9	0.93	6.8	4.4	16	AL
U86QD7	108.7	109.7	107.4	108.4	108.6	-0.51	6.3	0.9	107.2	-0.85	6.2	2.4	16	XX
V4YM3V_AL	109.3	104.1	112.3	114.9	110.2	-0.07	8.5	4.6	110.3	0.13	8.7	3.3	16	AL
W8G8MP_AL	108.8	108.9	109.6	109.6	109.2	-0.33	8.3	0.4 L	108.9	-0.31	8.7	2.4	16	AL
YKEXHT	106.4	110.4	112.8	112.4	110.5	0.03	8.4	2.9	110.6	0.21	9.2	2.5	16	AH
YNDER2	107.5 H	114.0	107.0	113.5	110.5	0.03	9.9	3.8	109.9	-0.01	8.7	3.2	12	XX
YPNZKN	102.0 *	103.6	103.0	101.1	102.4	-2.21 *	6.4	1.1	102.4	-2.33 *	6.4	1.1	4	XX

Consensus (All Labs) Results													
Wk Mean	110.42	110.06	110.78	109.82	Month Mean	110.41		Grand Mean	109.91				
Avg SDr	8.21	7.97	8.46	8.30	Avg SD	8.29		Avg SD	8.05				
SD btwn Labs	4.14	4.10	4.26	4.86	SD btwn Labs	3.62		SD btwn Labs	3.21				
Labs Incl	58	55	55	58	SD btwn Wks	2.85		SD btwn Wks	3.39				
Labs Excl	5	3	3	2	Labs Incl	59		Labs Incl	59				
Labs not Rcvd	0	5	5	3									



Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42F4
TAPPI Official Test Method T807

Report #630 (C)
March 2022

Key to Instrument Codes Reported by Participants

AC	Perkins Model C	AH	Perkins Model AH
AK	L & W Autoline 300	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 206
Bursting Strength (Mullen), 56 lb Linerboard - 56G2
 TAPPI Official Test Method T807

Report #630 (C)
March 2022

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	
2FWEDG	125.6	118.7	120.5	118.2	120.7	1.43	8.7	3.4	123.0	2.48	* 9.0	4.1	12	LA
2FWEDG_AL	120.1	119.8	117.5	115.9	118.3	0.76	8.1	2.0	116.2	0.21	9.4	2.6	12	XX
499BGX	117.9	116.8	120.3	115.6	117.7	0.58	11.9	2.0	118.4	0.94	10.9	2.8	12	AH
4G2LTE	114.1	115.2	119.8	112.0	115.3	-0.08	12.7	3.3	115.5	-0.03	11.4	2.7	12	LZ
4NGMNH	110.3	110.7	111.7	112.5	111.3	-1.17	6.8	1.0	113.8	-0.60	7.3	2.4	12	LA
4WE4G9	114.4	112.6	117.9	114.1	114.8	-0.22	7.1	2.2	114.2	-0.46	8.1	1.7	12	TP
66LD6D	120.8	131.0 X	124.9 *	115.0	122.9	2.04 *	11.8	6.7 H	115.4	-0.06	10.8	7.8 H	12	AH
67ZH2Q_AL	113.8	115.2	113.3	114.2	114.1	-0.39	7.0	0.8	114.7	-0.31	6.6	3.3	12	AL
7L79B9	114.1 H	119.8	119.7	122.9 *	119.1	0.99	11.6	3.7	108.8	-2.27 *	9.2	8.0 H	12	LC
84H92N	124.1	109.9	114.7	116.7	116.3	0.22	9.8	5.9	114.3	-0.44	10.4	3.6	12	XX
86GDHH_AL	117.2	117.5	111.0	119.1	116.2	0.19	12.6	3.6	115.9	0.10	12.4	3.2	12	AL
8H2XZQ_AL	117.3 H	116.3	117.3	117.5	117.1	0.43	11.3	0.5 L	116.9	0.45	10.6	2.3	8	AL
8MU6D8	130.1 *	131.8 X	132.4 X	132.5 X	131.7	4.46 X	11.6	1.1	133.9	6.13 X	12.8	7.3 H	12	AC
8P2DND	112.3	113.0	111.5	113.3	112.5	-0.83	10.2	0.8	112.1	-1.19	9.5	2.2	12	LA
99CU4B	116.9	114.5	119.3	120.5	117.8	0.62	7.5	2.7	118.5	0.96	7.3	2.3	12	AH
A33TMD	116.6	No DATA	No DATA	No DATA	116.6	0.29	7.2	0.0	114.0	-0.54	9.3	3.1	9	AH
A33TMD_AL	109.7	No DATA	No DATA	115.8	112.8	-0.77	7.4	4.3	113.7	-0.65	10.6	2.9	10	AL
AE923B	113.9	117.9	117.0	118.6	116.9	0.36	6.5	2.1	117.3	0.56	6.1	2.1	12	LA
B8RPMN_AL	119.5	121.3	119.5	117.7	119.5	1.09	10.3	1.5	117.2	0.55	11.0	3.1	12	AL
CT7WBM_AL	122.6	119.0	118.5	124.6 *	121.2	1.55	8.5	2.9	122.8	2.42 *	8.0	2.4	12	AL
CTQB47	119.2	119.4	117.1	117.7	118.4	0.78	9.8	1.1	118.2	0.89	10.6	2.6	12	LA
CVRNGX	126.1	120.1	116.5	120.6	120.8	1.46	9.3	4.0	118.9	1.10	10.5	3.4	12	XX
DDLF2V	116.7	118.5	123.9 *	117.0	119.0	0.96	10.2	3.3	120.4	1.61	9.3	3.7	12	XX
DFB3G6	119.5	115.8 L	119.5 L	109.6	116.1	0.16	7.3	4.7	113.4	-0.75	7.1	4.1	12	LC
DQTJ9B	111.7	111.8	107.2 *	110.6	110.3	-1.44	9.6	2.2	112.4	-1.08	8.9	3.4	12	LA
DQUERG_AL	117.8	105.8 *	113.7	114.0	112.8	-0.75	9.9	5.0	116.7	0.37	9.7	4.1	12	AL
EGL634_AL	111.8	116.0	119.9	119.0	116.7	0.31	8.6	3.7	118.2	0.88	8.4	2.9	12	AL
F4DMLZ	114.2	115.0	114.7	115.8 H	114.9	-0.17	14.9	0.7	115.0	-0.19	12.7	1.4	12	XX
G6F9NQ	138.3 XL	138.7 XL	139.5 XL	139.1 XL	138.9	6.44 X	3.4	0.5 L	139.4	7.98 X	3.5	1.2	12	AH
GB87JA_AL	114.1	113.7	119.3	119.2	116.6	0.29	5.8	3.1	115.8	0.07	7.1	2.9	12	AL
GEA99B	126.6 *	121.1	117.2	115.1	120.0	1.23	10.0	5.0	119.9	1.44	9.0	3.1	12	LC
GRCML2	114.5 H	106.8	110.9	111.3	110.9	-1.29	11.8	3.2	111.1	-1.51	10.3	4.6	12	LA
GWDJF3	114.4	No DATA	No DATA	No DATA	114.4	-0.32	7.2	0.0	116.7	0.37	7.5	2.8	8	AH
GYV3XB	116.9 L	116.7 L	116.3 L	116.6 L	116.6	0.30	1.3	0.3 L	118.2	0.88	2.1	2.2	12	LA
H6Y8MA	115.2	115.9	115.8	115.4	115.6	0.01	5.9	0.3 L	115.1	-0.16	5.9	0.4 L	12	LJ



Containerboard Interlaboratory Testing Program
 Analysis 206
Bursting Strength (Mullen), 56 lb Linerboard - 56G2
 TAPPI Official Test Method T807

Report #630 (C)
March 2022

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	
HE2L99	117.2	110.1	110.2	104.6 XH	110.5	-1.38	18.7	5.2	113.1	-0.85	15.5	3.9	12	LA
HWKHP2	111.0	110.4	114.4	112.7	112.1	-0.94	9.2	1.8	112.5	-1.02	9.7	2.3	8	LB
J9RMD9	113.2	109.2	112.9	107.4 *	110.6	-1.35	10.4	2.9	111.8	-1.27	10.9	3.1	12	LZ
JBLBV6	120.4	No DATA	No DATA	No DATA	120.4	1.34	5.8	0.0	117.1	0.51	6.5	3.5	8	AH
JBLBV6_AL	106.9	No DATA	No DATA	No DATA	106.9	-2.38 *	11.2	0.0	111.6	-1.33	9.4	3.0	8	AL
JL363Q	116.0	116.2	116.5 L	116.0 L	116.2	0.17	4.0	0.2 L	116.3	0.25	4.0	0.4 L	12	LA
KJWXJY	117.1	116.1	113.4	116.2	115.7	0.04	10.6	1.6	115.4	-0.08	11.3	2.8	12	LA
MBPBH9	113.9	109.0 H	114.4 H	118.1 H	113.9	-0.46	17.8	3.7	116.2	0.20	13.7	3.2	12	LZ
NCXPJM	113.7	115.3	114.2	114.1	114.3	-0.34	8.0	0.7	114.2	-0.48	8.0	2.2	12	AH
NDEYFU	105.5 *	107.3	118.5 H	117.9	112.3	-0.90	12.4	6.9 H	114.9	-0.24	11.8	6.1	10	TB
NGDACU_AL	109.3	114.7	113.7	114.9	113.2	-0.66	8.1	2.6	112.5	-1.03	7.7	3.0	12	XX
NHJWPY	92.0 XH	98.5 X	97.6 X	95.7 XH	96.0	-5.40 X	22.1	2.9	101.9	-4.58 X	17.2	7.2	8	LA
NN9CD7_AL	118.1	113.2	116.8	111.1	114.8	-0.21	13.1	3.2	114.2	-0.46	11.9	3.4	12	AL
Q3HMBR_AL	123.5	125.6 *	122.1	118.8	122.5	1.93	9.5	2.9	121.7	2.06 *	9.8	5.8	12	AK
Q8G4ML	123.2	113.6	120.5	118.9	119.0	0.97	10.3	4.1	117.8	0.73	10.7	4.5	12	LC
Q8G4ML_AL	122.5	112.0	120.5	119.6	118.6	0.85	9.3	4.6	118.3	0.91	10.7	5.2	12	XX
QJD3HX	113.1	116.1	111.4	110.4	112.7	-0.78	10.4	2.5	111.0	-1.55	9.7	3.5	10	TP
QJD3HX_AL	110.3	111.5	106.5 *	107.7 *	109.0	-1.81	8.3	2.3	109.0	-2.22 *	8.3	2.3	4	XX
RQ4A9G	115.5	115.8	115.1	115.4	115.5	-0.02	12.6	0.3 L	115.5	-0.03	11.6	3.1	12	LA
TVEFQ9_AL	110.9	115.3	116.9	112.9	114.0	-0.42	11.3	2.7	113.1	-0.84	10.8	2.4	12	AL
U3AY8U_AL	114.8	109.1	116.2	116.5	114.1	-0.39	10.7	3.5	117.6	0.66	10.6	4.9	12	XX
U86QD7	116.5	118.4	116.3 L	112.2 L	115.9	0.08	5.2	2.6	114.0	-0.52	6.0	3.4	12	XX
V4YM3V_AL	117.8	113.9	116.0	121.6	117.3	0.49	10.6	3.3	115.5	-0.04	10.4	4.3	12	XX
W8G8MP_AL	110.0 H	113.6	114.2	111.8	112.4	-0.87	11.3	1.9	116.7	0.38	10.8	4.2	12	AL
YKEXHT	122.4	117.6	121.2	120.4	120.4	1.34	9.6	2.0	116.1	0.18	9.0	4.8	12	AH
YNDER2	119.5	106.0 *	118.5	112.0	114.0	-0.43	9.4	6.3	115.7	0.04	11.0	4.5	12	XX
YPNZKN	107.4 L	101.5 X	113.2	103.5 X	106.4	-2.52 *	6.4	5.2	106.4	-3.09 X	6.4	5.2	4	XX

Consensus (All Labs) Results														
Wk Mean	116.33	114.71	116.30	115.71	Month Mean	115.54			Grand Mean	115.59				
Avg SDr	9.84	9.85	9.86	9.86	Avg SD	9.98			Avg SD	9.69				
SD btwn Labs	5.11	4.22	3.82	3.70	SD btwn Labs	3.62			SD btwn Labs	2.98				
Labs Incl	60	52	54	53	SD btwn Wks	3.34			SD btwn Wks	3.63				
Labs Excl	2	5	3	5	Labs Incl	59			Labs Incl	58				
Labs not Rcvd	0	5	5	4										



Containerboard Interlaboratory Testing Program
Analysis 206
Bursting Strength (Mullen), 56 lb Linerboard - 56G2
TAPPI Official Test Method T807

Report #630 (C)
March 2022

Key to Instrument Codes Reported by Participants

AC	Perkins Model C	AH	Perkins Model AH
AK	L & W Autoline 300	AL	L & W Autoline 400
LA	L&W Bursting Strength Tester	LB	L&W Burst-O-Matic
LC	L&W Autoline (206 Enrollment)	LJ	L&W Bursting Strength Tester J-Type
LZ	L&W (model not specified)	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 - 42F4
 TAPPI Official Test Method T822

Report #630 (C)
March 2022

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	
24FR2V	98.3 *	96.1	98.0	98.2	97.6	1.64	2.4	1.0	93.0	0.23	3.1	3.0	16	LD
2FWEDG	91.4	89.3	90.0	90.0	90.2	-0.61	2.5	0.9	91.2	-0.36	3.2	1.4	16	LD
499BGX	93.2	94.0	96.0	94.4	94.4	0.66	2.4	1.2	94.6	0.73	3.0	1.2	16	LC
4G2LTE	87.5	87.7	88.1	84.8 *	87.0	-1.56	3.3	1.5	86.0	-2.02 *	3.8	2.6	12	LC
4NGMNH	88.9	88.6 L	88.6	89.8	89.0	-0.98	1.5	0.6	88.9	-1.09	2.1	1.1	16	LD
4WE4G9	91.5	93.0	93.7 H	92.1	92.6	0.11	4.0	1.0	91.9	-0.12	4.3	1.2	16	TJ
66LD6D	86.2	87.1	83.9 *	84.7 *	85.5	-2.04 *	2.0	1.4	88.3	-1.28	2.7	2.5	16	LD
73AXAQ	80.0 X	83.5 *	80.1 X	81.1 X	81.2	-3.33 X	3.8	1.6	78.9	-4.27 X	4.8	2.6	16	EM
7L79B9	89.2	87.5	86.5	86.8	87.5	-1.42	3.3	1.2	92.5	0.05	3.0	4.2	16	LZ
86GDHH	90.4	92.4	90.2	90.6	90.9	-0.40	2.9	1.0	91.0	-0.42	3.0	1.1	16	LD
8H2XZQ	89.7	90.1	90.4	90.7	90.2	-0.61	3.1	0.4	87.9	-1.39	3.7	3.2	12	LD
8P2DND	99.1 *	98.2	99.4	98.5	98.8	1.98 *	3.1	0.5	97.9	1.77	3.5	2.2	16	LX
99CU4B	97.5	93.3	93.4	94.0	94.6	0.71	2.7	2.0	93.9	0.51	2.7	2.1	16	LG
9WETMZ	93.6 L	90.9	90.6	93.9	92.2	0.01	1.7	1.8	89.2	-1.00	2.5	4.5	12	TH
AE923B	91.3	87.6	88.1	93.4	90.1	-0.64	2.4	2.7	91.0	-0.43	2.4	2.3	16	LC
BVUTH2	94.4	96.1	92.6	94.3	94.4	0.65	3.0	1.4	94.1	0.58	3.3	1.2	16	LZ
BWA8UH	91.7	91.5	91.0	91.9	91.5	-0.21	2.0	0.4	92.2	-0.05	1.7	1.4	16	MB
CT7WBM	87.6	94.4	93.6	93.6	92.3	0.02	2.4	3.2	92.5	0.07	2.2	3.1	16	LD
CTQB47	94.8	94.5	94.9	95.4	94.9	0.80	2.6	0.4	94.9	0.82	3.3	1.4	16	LZ
CVRNGX	95.1	95.5 H	No DATA	No DATA	95.3	0.93	4.7	0.3	96.8	1.44	3.5	4.1	13	MB
CXW7LK	94.0	90.1	94.6	98.1	94.2	0.60	3.1	3.3 H	98.3	1.90	3.1	3.8	16	MB
DAM67V	94.6	93.4	90.8	93.1	93.0	0.24	2.3	1.6	88.5	-1.20	3.2	5.2	16	TH
DDLDF2V	87.4	89.5	87.2	91.1	88.8	-1.03	3.3	1.9	89.0	-1.05	3.9	1.8	16	LD
DFB3G6	93.0	94.9	94.1	92.5	93.6	0.43	2.9	1.1	93.5	0.38	3.6	2.3	16	LD
DQTJ9B	88.6	89.7	89.0	89.5	89.2	-0.91	2.4	0.5	90.0	-0.72	2.5	1.0	16	LD
DQUERG	91.2	91.7	93.2	92.8	92.2	0.00	3.1	0.9	91.2	-0.36	3.0	1.9	16	LC
G6F9NQ	90.0	88.4	89.1	89.0	89.1	-0.93	2.0	0.6	91.4	-0.28	2.3	2.9	16	LD
GB87JA	93.0	95.0	94.8	91.7	93.6	0.43	3.7	1.6	93.8	0.47	3.6	1.4	16	LZ
GEA99B	92.3	91.1	92.5	92.6	92.1	-0.03	3.0	0.7	92.8	0.15	2.9	1.9	16	LD
GYV3XB	95.9	96.2 L	96.9 L	96.2 L	96.3	1.22	1.3	0.4	95.8	1.13	1.1	1.2	16	TU
H6Y8MA	91.8	92.3	91.6	92.1	91.9	-0.08	2.6	0.3	91.9	-0.13	3.6	0.4 L	16	LD
HWKHP2	91.8	94.9	97.6	93.0	94.3	0.63	3.2	2.5	93.3	0.31	3.0	1.9	12	LC
J9RMD9	90.3	90.8	92.7	94.0	91.9	-0.08	2.4	1.7	91.2	-0.34	2.5	1.5	16	LD
JCTTRE	34.5 XH	28.4 XH	38.0 XH	36.6 XH	34.4	-17.42 X	22.5	4.2 H	31.7	-19.34 X	18.8	5.1	12	XX
JL363Q	92.9	92.9	92.9	93.0	92.9	0.21	2.3	0.0 L	93.1	0.27	2.4	0.5 L	16	LD



Containerboard Interlaboratory Testing Program
 Analysis 215
Ring Crush, 42 lb Linerboard - 42F4
 TAPPI Official Test Method T822

Report #630 (C)
March 2022

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	
KWTJFT	89.1	89.5	89.3	89.7 L	89.4	-0.85	1.5	0.3 L	89.0	-1.06	1.3	0.8	16	RS
NDEYFU	94.6	90.6	87.8	94.3	91.8	-0.12	3.1	3.2 H	91.8	-0.16	4.3	2.6	16	LD
NHJWPY	105.2 XH	112.8 X	115.2 X	115.7 XH	112.2	6.03 X	5.9	4.8 H	94.8	0.79	5.9	11.2 H	16	LB
Q8G4ML	91.2	82.9 *	82.2 *	87.7	86.0	-1.87	3.0	4.2 H	89.8	-0.81	2.6	3.4	16	LD
QJD3HX	94.1	94.3	93.0	93.8	93.8	0.48	2.6	0.6	93.9	0.50	2.6	1.5	16	LD
QNJVB9	91.9	91.4	90.0	92.4	91.4	-0.25	2.6	1.0	92.3	0.00	2.8	1.6	16	LC
R9A8ZT	99.9 *H	99.1 *	95.8	98.6 H	98.3	1.84	5.1	1.7	99.0	2.15 *	4.3	1.7	16	TU
RJ96K8	93.1	94.3	99.8 *	100.1 *	96.8	1.39	2.2	3.6 H	96.1	1.20	2.6	2.5	16	TH
RQ4A9G	91.2	89.5	91.6	89.4	90.4	-0.54	2.9	1.1	90.4	-0.61	2.7	1.2	16	LD
TVEFQ9	92.4	92.8	91.9	92.4	92.4	0.05	2.9	0.4	91.6	-0.23	3.0	1.1	12	LD
U3AY8U	75.1 XH	69.2 XH	72.9 XH	73.6 XH	72.7	-5.88 X	9.0	2.5	73.7	-5.94 X	6.9	10.0 H	16	LC
U86QD7	89.2	86.9	89.5 H	89.1	88.7	-1.07	4.5	1.2	87.5	-1.54	4.2	5.4	16	LD
V4YM3V	89.1	89.6	90.1	89.0	89.4	-0.84	2.0	0.5	90.3	-0.65	1.8	0.9	16	LD
V8ZTJL	88.8	89.5	88.5 H	88.1	88.7	-1.05	3.6	0.6	88.7	-1.15	3.6	0.6 L	4	LD
W8G8MP	96.2	95.4 H	95.8	96.3	95.9	1.12	4.3	0.4	95.4	0.98	6.8	5.0	16	LC
WMAWJL	91.5	89.1	92.2	88.2	90.2	-0.60	3.6	1.9	90.3	-0.63	3.1	1.6	16	LC
YPNZKN	102.4 X	100.0 *	100.3 *	99.8 *	100.6	2.53 *	2.7	1.2	100.6	2.65 *	2.7	1.2	4	TU

Consensus (All Labs) Results									
Wk Mean	92.13	91.78	91.99	92.44	Month Mean	92.21	Grand Mean	92.31	
Avg SDr	2.96	2.82	2.84	3.06	Avg SD	2.94	Avg SD	3.25	
SD btwn Labs	3.11	3.64	3.90	3.63	SD btwn Labs	3.32	SD btwn Labs	3.13	
Labs Includ	47	49	47	47	SD btwn Wks	1.62	SD btwn Wks	2.93	
Labs Exclcd	5	3	4	4	Labs Includ	48	Labs Includ	49	
Labs not Rcvd	0	0	1	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
RS	Regmed Digital Crush Tester CT-2000	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
 Analysis 216
Ring Crush, 56 lb Linerboard - 56G2
 TAPPI Official Test Method T822

Report #630 (C)
March 2022

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
24FR2V	139.9	144.5	151.9 *	144.5	145.2	1.47	2.9	5.0 H	136.4	-0.06	4.6	7.3	12	LD
2FWEDG	132.5 L	131.5	132.4	134.4	132.7	-0.82	2.8	1.2	133.0	-0.81	3.8	1.7	12	LD
499BGX	140.0	137.6	140.9	137.8	139.1	0.34	2.9	1.6	139.6	0.65	3.5	1.4	12	LC
4G2LTE	133.5	134.3	130.9	134.2	133.2	-0.73	4.1	1.6	130.0	-1.48	4.6	4.6	12	LC
4NGMNH	136.2	135.4	135.8	138.1	136.4	-0.15	2.7	1.2	134.0	-0.58	2.8	2.4	12	LD
4WE4G9	135.3 H	138.3	137.6 H	137.6	137.2	0.00	6.4	1.3	136.9	0.05	6.2	1.4	12	TJ
66LD6D	124.1 *	125.1 *	123.4 *	120.0 X	123.1	-2.58 *	3.3	2.2	127.3	-2.07 *	3.3	4.0	12	LD
73AXAQ	118.1 X	119.5 X	118.3 X	119.6 X	118.9	-3.36 X	4.5	0.8	116.9	-4.35 X	6.4	4.0	12	EM
7L79B9	133.0	132.0	134.3	134.6	133.5	-0.69	3.9	1.2	138.0	0.29	4.7	3.7	12	LZ
86GDHH	133.2	134.8	132.1	133.6	133.4	-0.70	4.6	1.1	132.9	-0.84	4.1	1.2	12	LD
8H2XZQ	132.8	134.1	132.5	134.5	133.5	-0.68	4.2	1.0	131.7	-1.09	4.0	2.1	8	LD
8P2DND	151.6 X	149.0 *	148.1	145.3	148.5	2.07 *	4.5	2.6	148.4	2.59 *	4.9	2.8	12	LY
8V87FM	147.1 *	146.8 L	146.0	148.6 *	147.1	1.81	2.9	1.1	145.8	2.01 *	4.4	2.0	12	EX
99CU4B	138.9	135.3	138.0	139.3	137.9	0.12	3.4	1.8	138.5	0.40	3.5	2.3	12	LY
9WETMZ	136.3	137.4	136.0 L	138.6	137.1	-0.02	3.7	1.2	133.2	-0.78	4.3	5.2	12	TH
AE923B	138.3	133.5	135.0	137.1	136.0	-0.22	4.8	2.1	136.0	-0.16	5.9	3.0	12	LC
BVUTH2	136.2	137.2	137.1	139.5	137.5	0.05	4.2	1.4	138.5	0.41	4.7	1.7	8	LZ
BWA8UH	136.5 L	136.1 L	136.0 L	136.4 L	136.2	-0.18	1.5	0.3 L	137.5	0.18	1.6	1.1	12	MB
CT7WBM	126.1 *	130.7	131.8	135.5	131.0	-1.13	3.4	3.9	134.8	-0.42	3.2	5.0	12	LD
CTQB47	135.5 L	136.5	138.2	135.2	136.3	-0.16	2.9	1.3	135.8	-0.20	3.4	1.5	12	LZ
CVRNGX	139.5	142.4	No DATA	No DATA	141.0	0.69	4.0	2.0	141.6	1.08	5.1	3.8	9	MB
CXW7LK	139.9	139.8	137.7	138.7	139.0	0.33	3.9	1.1	142.2	1.21	4.3	5.2	12	MB
DAM67V	131.8	137.1	137.9 L	138.3	136.3	-0.17	3.4	3.0	132.6	-0.90	4.3	5.4	12	TH
DDL2V	136.6	136.7	138.6 H	135.0	136.7	-0.09	5.6	1.5	136.9	0.06	6.3	1.6	12	LD
DFB3G6	138.6	139.7	139.0	140.1	139.4	0.40	5.5	0.7	139.1	0.54	5.1	2.5	12	LD
DQTJ9B	134.2	134.9	133.6	135.8	134.6	-0.47	3.8	0.9	133.9	-0.61	3.3	1.3	12	LD
DQUERG	132.7	138.0	136.0	132.7	134.9	-0.43	3.8	2.6	133.3	-0.74	3.9	2.5	12	LC
G6F9NQ	132.7	132.9	132.0	131.7	132.3	-0.89	3.6	0.5	135.8	-0.20	3.5	3.1	12	LD
GB87JA	138.4 H	132.9	137.8	135.4 H	136.1	-0.19	7.7	2.5	136.4	-0.05	6.0	2.4	12	LZ
GEA99B	133.8	138.3	135.9	135.8	135.9	-0.23	3.5	1.8	136.6	-0.01	3.7	1.9	12	LD
GYV3XB	145.2 L	146.3 L	146.3 L	145.7 L	145.9	1.59	1.3	0.5	145.6	1.96 *	1.3	0.6 L	12	TU
H6Y8MA	138.0	138.0	137.5	137.2	137.7	0.09	3.5	0.4 L	137.6	0.20	3.5	0.4 L	12	LD
HWKHP2	138.7	142.5	145.2	139.4 L	141.5	0.78	4.1	3.0	138.5	0.39	3.6	4.1	8	LC
J9RMD9	135.2	140.1	142.0	139.3	139.1	0.36	4.0	2.9	135.5	-0.26	4.0	3.3	12	LD
JCTTRE	27.4 XH	32.1 XH	28.1 XH	37.0 XH	31.1	-19.44 X	24.9	4.4	67.5	-15.24 X	22.7	56.1 H	12	XX



Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 56 lb Linerboard - 56G2

TAPPI Official Test Method T822

Report #630 (C)

March 2022

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
JL363Q	136.4	136.8	137.2	136.5	136.7	-0.09	3.1	0.4 L	136.4	-0.06	3.0	0.5 L	12	LD
KWTJFT	135.0 L	134.8 L	134.7 L	134.7 L	134.8	-0.44	1.2	0.2 L	135.7	-0.22	1.2	2.0	12	RS
NDEYFU	140.0	140.4	133.9	136.9	137.8	0.11	3.8	3.0	140.7	0.88	4.3	5.4	12	LD
NHJWPY	140.4 H	156.7 XH	141.4 H	149.1 *H	146.9	1.78	8.5	7.6 H	139.8	0.69	7.2	9.3 H	8	LB
Q8G4ML	132.3	123.5 *	123.7 *	124.5 *	126.0	-2.05 *	3.5	4.2	129.8	-1.51	3.6	4.5	12	LD
QJD3HX	136.2	140.4	139.6	136.7	138.2	0.19	4.5	2.1	136.2	-0.11	4.2	2.7	12	LD
QNJVB9	136.5	137.9	138.3	137.8	137.6	0.08	2.8	0.8	136.4	-0.07	6.1	3.1	12	LC
R9A8ZT	143.5	146.2	142.1	139.2	142.7	1.02	3.9	2.9	142.2	1.21	4.0	3.1	12	TU
RJ96K8	141.7	139.7	140.8	142.3	141.1	0.72	4.3	1.1	141.5	1.06	4.0	1.7	8	TH
RQ4A9G	132.4	134.7	133.4	133.2	133.4	-0.69	3.2	0.9	133.9	-0.61	3.5	1.3	12	LD
TVEFQ9	137.1	134.4	133.9	137.1	135.6	-0.29	3.4	1.7	135.9	-0.17	3.3	1.6	12	LD
U3AY8U	106.1 XH	94.3 XH	94.4 XH	96.9 XH	97.9	-7.20 X	14.3	5.6 H	108.5	-6.20 X	11.2	19.5 H	12	LC
U86QD7	128.2	131.9	127.6	128.9	129.2	-1.47	4.8	1.9	126.0	-2.35 *	4.6	6.0	12	LD
V4YM3V	132.7	134.2	132.7	134.6	133.6	-0.67	2.6	1.0	135.2	-0.32	3.2	1.8	12	LD
V8ZTJL	131.3	128.9	130.6	128.5	129.8	-1.35	3.7	1.3	131.5	-1.13	4.0	2.9	6	LD
W8G8MP	149.7 *	151.9 *	150.4 *	151.5 X	150.9	2.51 *	4.7	1.0	140.0	0.72	6.6	10.1 H	12	LC
WMAWJL	133.8	132.2	136.5	135.3	134.4	-0.51	5.2	1.8	133.5	-0.70	4.4	2.4	12	LC
YPNZKN	145.5 L	144.8	147.8	144.2	145.6	1.54	2.3	1.6	145.6	1.96 *	2.3	1.6	4	TU

Consensus (All Labs) Results														
Wk Mean	136.39	137.19	137.18	137.22	Month Mean	137.19			Grand Mean	136.68				
Avg SDr	4.04	3.86	3.82	4.41	Avg SD	4.07			Avg SD	4.27				
SD btwn Labs	4.92	5.60	5.99	4.73	SD btwn Labs	5.45			SD btwn Labs	4.54				
Labs Incl	49	49	49	47	SD btwn Wks	2.23			SD btwn Wks	3.67				
Labs Excl	4	4	3	5	Labs Incl	50			Labs Incl	50				
Labs not Rcvd	0	0	1	1										

Key to Instrument Codes Reported by Participants

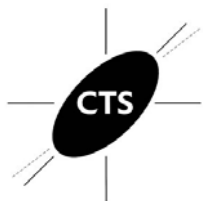
EM	Emerson 1200	EX	Emerson (model not specified)
LB	L&W Crush Tester 240	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LY	L&W Crush Tester 958
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
RS	Regmed Digital Crush Tester CT-2000	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		



Containerboard Interlaboratory Testing Program
 Analysis 223
STFI, 42 lb Linerboard - 42F4
 TAPPI Official Test Method T826

Report #630 (C)
March 2022

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	
24FR2V	25.2	24.8	25.2	24.8	25.0	0.78	2.0	0.3	25.1	1.03	1.9	0.8	16	LH
2FWEDG_AL	23.2	23.9	23.6	22.5	23.3	-0.44	1.4	0.6	23.2	-0.62	1.7	0.5	16	AL
499BGX	23.9 L	23.5	23.4	24.0	23.7	-0.16	1.4	0.3	23.8	-0.12	1.6	0.4	16	LU
4G2LTE	22.0	21.2	21.0 *	21.9	21.5	-1.68	1.7	0.5	21.1	-2.38 *	1.5	0.7	12	LY
4GCRLA	25.2	24.6 L	25.1	25.6	25.1	0.87	1.3	0.4	25.2	1.13	1.5	0.6	16	LH
4NGMNH	22.8	24.0	23.7	23.6	23.5	-0.30	1.6	0.5	23.4	-0.43	1.3	0.4	16	BK
4WE4G9	23.4	24.1	24.3	24.8	24.2	0.19	1.5	0.6	24.1	0.16	1.4	0.4	16	TT
66LD6D	21.0 *	21.5	20.8 *	20.4 *	20.9	-2.13 *	1.8	0.5	22.0	-1.59	1.8	0.8	16	LU
67ZH2Q	23.7	25.0 H	23.6	NO DATA	24.1	0.15	1.9	0.8	24.0	0.11	1.9	0.8	13	LU
7L79B9	23.2	23.2 H	24.1 L	23.1 L	23.4	-0.36	1.8	0.5	23.4	-0.43	1.7	0.8	16	LA
86GDHH_AL	24.2	23.6	23.9	23.8	23.9	-0.02	1.7	0.3	23.7	-0.21	1.8	0.4	16	AL
8H2XZQ	23.5	22.9	22.4	22.1	22.7	-0.84	1.7	0.6	22.5	-1.18	1.6	0.5	12	LA
8H2XZQ_AL	23.7	23.3	24.3	21.8 H	23.3	-0.45	3.1	1.1	23.3	-0.52	2.2	0.7	12	AL
8MU6D8	21.9	22.3	22.6	22.1	22.2	-1.20	1.3	0.3	22.4	-1.29	1.5	0.5	16	LH
8P2DND	26.1	23.5 H	23.5 H	24.8	24.5	0.39	2.3	1.2	23.3	-0.53	2.5	2.1	7	LZ
99CU4B	23.4	23.4	22.7	23.3	23.2	-0.51	1.4	0.3	23.3	-0.50	1.6	0.6	16	LU
9G6Y2H	23.6	22.6	23.2	22.3	22.9	-0.72	1.5	0.6	23.0	-0.72	1.6	0.4	16	LW
9WETMZ	22.3	21.6	20.9 *	22.1	21.7	-1.57	1.7	0.6	21.4	-2.11 *	1.7	0.8	12	LZ
A33TMD	22.0	NO DATA	NO DATA	23.7	22.8	-0.78	1.6	1.2	23.1	-0.67	1.7	1.0	14	LH
A33TMD_AL	21.2 L	NO DATA	NO DATA	21.6	21.4	-1.78	1.0	0.3	21.9	-1.71	1.6	0.9	14	AL
AE923B	23.8	23.6	24.2	NO DATA	23.9	-0.03	1.4	0.3	24.1	0.17	1.4	0.8	15	LA
AV2KXC	23.1	23.8	23.7	23.0	23.4	-0.36	1.6	0.4	23.5	-0.37	1.7	0.4	16	LA
B8RPMN_AL	26.8	26.2	26.3	25.2	26.1	1.55	1.9	0.7	26.0	1.80	1.8	0.5	16	AL
BVUTH2	27.1 *L	27.8 *	27.2 *	26.8 *	27.2	2.36 *	1.4	0.4	34.4	8.95 X	2.1	9.1 H	16	XX
CC4UZA	26.2	24.7	24.0	24.2	24.8	0.60	1.5	1.0	24.5	0.48	1.5	0.8	8	LH
CT7WBM_AL	24.3	24.8	24.5	24.7	24.6	0.47	1.9	0.2	23.9	-0.03	1.6	0.8	16	AK
CTQB47	22.1	22.1	22.2	22.3	22.2	-1.24	1.8	0.1	22.6	-1.13	1.7	0.5	16	LU
CVRNGX	26.2	25.4	NO DATA	NO DATA	25.8	1.35	1.7	0.6	25.5	1.35	1.7	1.4	14	LA
CXW7LK	24.2	23.5	24.9	25.0 H	24.4	0.34	2.2	0.7	25.0	0.90	1.9	0.9	16	LA
DAM67V	21.4 L	22.0 L	22.5	22.8	22.2	-1.22	1.1	0.6	21.5	-2.07 *	1.8	1.2	16	LZ
DDL2V	24.4 L	25.0 L	24.4 L	25.4 L	24.8	0.61	0.8	0.5	24.8	0.79	0.7	0.5	16	LH
DFB3G6	25.3	24.7	24.5	26.4	25.2	0.94	1.7	0.9	24.9	0.89	1.9	0.7	16	LA
DQTJ9B	22.9	23.2	22.8	22.6	22.9	-0.75	1.6	0.3	22.7	-1.05	1.6	0.5	16	LA
DQUERG	23.4	23.2	24.1	NO DATA	23.6	-0.23	1.5	0.5	25.0	0.90	1.7	1.4	13	LU
EGL634_AL	24.1	23.8	23.9	23.2	23.7	-0.12	1.8	0.4	23.9	-0.04	1.7	0.6	16	AL



Containerboard Interlaboratory Testing Program

Analysis 223

Report #630 (C)

March 2022

STFI, 42 lb Linerboard - 42F4

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	
GB87JA_AL	22.8	24.0	23.9	23.7	23.6	-0.23	1.5	0.5	23.2	-0.58	1.6	0.6	16	AL
GEA99B	23.5	23.8	24.5	23.4	23.8	-0.08	1.5	0.5	24.0	0.09	1.6	0.4	16	LA
GRCML2	25.9	24.6	24.8	25.1	25.1	0.84	2.1	0.6	24.7	0.71	2.1	0.9	16	LH
GWDJF3	26.0	No DATA	No DATA	No DATA	26.0	1.51	2.1	0.0	26.4	2.12 *	1.9	0.5	12	LU
HE2L99	23.3	22.7	22.7	L 22.5	22.8	-0.79	1.4	0.4	22.4	-1.28	1.5	0.7	16	LY
HWKHP2	22.2	23.4	23.9	23.1	23.1	-0.55	1.6	0.7	23.0	-0.75	1.6	0.7	12	LW
J9RMD9	23.8	23.0	23.5	22.8	23.3	-0.46	1.7	0.4	23.1	-0.72	1.7	0.5	16	LY
JBLBV6	24.5	No DATA	No DATA	No DATA	24.5	0.43	1.3	0.0	24.8	0.80	1.7	0.5	9	LU
JBLBV6_AL	24.1	No DATA	No DATA	24.9	L 24.5	0.40	1.0	0.6	23.8	-0.10	1.3	1.1	10	AL
JL363Q	23.9	24.0	23.9	24.0	23.9	0.02	2.1	0.1	L 23.9	-0.02	2.1	0.1	L 16	LA
LNERPV	24.7	24.5	24.0	24.0	24.3	0.28	1.5	0.3	24.2	0.29	1.5	1.4	16	LH
MBPBH9	27.3 *	27.0 *	26.3	26.6	26.8	2.04 *	1.6	0.5	26.7	2.41 *	1.9	0.6	8	LH
NCXPJM	24.0	24.8	24.1	24.4	24.3	0.29	1.4	0.4	24.0	0.09	1.4	0.4	16	TT
NDEYFU	25.4	24.9	3.2	XL 24.1	19.4	-3.18	X 1.9	10.8	H 22.2	-1.45	2.0	5.6	H 14	LW
NGDACU	25.6	H 26.1	21.7	22.2	23.9	0.00	1.9	2.3	H 23.7	-0.16	1.8	1.2	16	LY
NGDACU_AL	24.7	26.1	24.9	22.6	24.6	0.47	1.4	1.4	H 24.8	0.76	1.7	1.0	16	XX
NHJWPY	22.3	H 22.7	23.3	23.5	23.0	-0.68	2.2	0.6	35.7	9.99	X 2.8	8.6	H 16	LH
NMYC9Y	20.8 *	20.0 *	20.7 *	20.8 *	20.6	-2.36 *	1.8	0.4	19.9	-3.40	X 1.8	0.9	12	LH
PGP974	25.1	25.2	24.9	24.4	24.9	0.69	1.7	0.3	24.6	0.63	1.6	1.2	16	LA
Q3HMBR_AL	25.6	24.5	24.6	25.7	25.1	0.83	2.1	0.6	24.9	0.87	1.7	0.8	16	AK
Q8G4ML	18.5	XH 17.4	X 14.8	XH 16.3	X 16.7	-5.10	X 2.1	1.6	H 17.3	-5.59	X 2.1	1.5	16	LZ
Q8G4ML_AL	40.9	XL 37.1	XL 38.2	XL 37.5	XL 38.4	10.31	X 0.0	1.7	H 40.9	14.45	X 0.0	2.5	H 16	AL
R9A8ZT	24.0	H 24.1	23.0	23.3	23.6	-0.22	2.0	0.5	24.5	0.47	1.9	0.9	16	LA
RQ4A9G	23.1	23.4	23.4	23.3	23.3	-0.45	1.6	0.1	23.1	-0.65	1.5	0.4	16	LZ
TVEFQ9_AL	25.4	25.2	24.4	H 26.1	L 25.3	0.97	2.0	0.7	25.0	0.92	1.9	0.5	12	AL
U3AY8U_AL	24.5	24.4	26.4	25.1	25.1	0.83	1.4	0.9	23.6	-0.28	1.4	1.2	15	AL
V4YM3V_AL	24.3	23.0	23.6	25.7	L 24.1	0.15	1.5	1.2	23.7	-0.14	1.5	1.0	16	AL
W8G8MP_AL	25.6	27.6 *	26.9 *	27.2 *	26.8	2.07 *	1.8	0.9	25.3	1.21	1.7	1.3	16	AL
WMAWJL	22.1	22.5	21.8	21.8	22.1	-1.32	1.6	0.3	22.3	-1.33	1.7	0.4	16	LY
YPNZKN	26.5	26.8	26.4	25.0	26.2	1.60	2.0	0.8	26.2	1.93	2.0	0.8	4	TT



Containerboard Interlaboratory Testing Program
 Analysis 223
STFI, 42 lb Linerboard - 42F4
 TAPPI Official Test Method T826

Report #630 (C)
March 2022

Consensus (All Labs) Results									
Wk Mean	24.00	23.98	23.84	23.77	Month Mean	23.91	Grand Mean	23.90	
Avg SDr	1.75	1.73	1.62	1.77	Avg SD	1.70	Avg SD	1.70	
SD btwn Labs	1.55	1.51	1.45	1.54	SD btwn Labs	1.41	SD btwn Labs	1.18	
Labs Incl	63	58	56	57	SD btwn Wks	0.68	SD btwn Wks	1.10	
Labs Excl	2	2	3	2	Labs Incl	62	Labs Incl	58	
Labs not Rcvd	0	5	6	6					

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

Analysis 224

Report #630 (C)

March 2022

STFI, 56 lb Linerboard - 56G2

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	
24FR2V	36.9	36.2	35.5	34.8	35.9	0.33	2.5	0.9	35.9	0.39	2.6	0.7	12	LH
2FWEDG_AL	35.4	35.1	34.7	33.9	34.8	-0.13	2.2	0.7	34.8	-0.09	2.1	0.7	12	AL
499BGX	35.4	35.6	34.6	35.1	35.2	0.04	2.8	0.5	34.7	-0.16	2.4	0.7	12	LU
4G2LTE	31.0	30.4 *	30.7	31.5	30.9	-1.76	2.6	0.5	31.7	-1.50	2.4	3.1 H	12	LW
4GCRLA	36.3 L	35.7 L	36.3	36.0 L	36.1	0.41	1.3	0.3	36.2	0.56	1.5	0.6	12	LH
4NGMNH	33.1 L	34.5	33.7	34.8 L	34.0	-0.44	1.6	0.8	34.1	-0.42	1.8	0.7	12	BK
4WE4G9	34.6 L	34.9	35.0	34.8	34.8	-0.11	1.7	0.2	34.8	-0.12	1.6	0.3 L	12	TT
66LD6D	30.5	30.6 *	30.3 *	29.5 *	30.2	-2.05 *	2.3	0.5	31.5	-1.63	2.4	1.1	12	LU
67ZH2Q	35.9	37.0 H	35.4 L	NO DATA	36.1	0.42	2.5	0.8	35.3	0.12	2.2	1.4	10	LU
7L79B9	35.5 L	34.2 L	33.7	34.0	34.3	-0.32	2.0	0.8	30.5	-2.07 *	1.6	5.1 H	12	LA
86GDHH_AL	34.5	35.1	34.4	34.0	34.5	-0.25	2.1	0.4	34.6	-0.21	2.2	0.7	12	AL
8H2XZQ	32.8	33.3	32.5	33.6	33.0	-0.87	2.6	0.5	32.8	-1.04	2.4	0.8	8	LA
8H2XZQ_AL	32.4 H	35.3	35.9	35.5	34.8	-0.14	4.4	1.6	34.8	-0.11	3.6	1.1	8	AL
8MU6D8	32.1 L	32.6	32.5	33.3	32.6	-1.04	1.7	0.5	32.6	-1.09	1.9	0.5	12	LH
8P2DND	36.2	NO DATA	34.2 H	36.4 H	35.6	0.21	3.3	1.2	35.6	0.25	3.3	1.2	3	LZ
99CU4B	35.3	34.4	33.2	33.0	33.9	-0.48	2.1	1.1	33.8	-0.56	2.0	0.9	12	LU
9G6Y2H	33.3	31.7	33.8	33.4	33.0	-0.87	2.2	0.9	33.6	-0.66	2.0	1.0	12	LW
9WETMZ	30.1	33.5	31.1	32.3	31.8	-1.40	1.9	1.5	29.9	-2.33 *	2.2	2.0	12	XX
A33TMD	32.6	NO DATA	NO DATA	35.2	33.9	-0.51	2.5	1.8	35.2	0.08	2.5	1.3	10	LH
A33TMD_AL	30.6 L	NO DATA	NO DATA	31.0	30.8	-1.81	1.5	0.3	32.8	-1.03	1.8	1.5	10	AL
AE923B	34.6 L	33.4	34.5	NO DATA	34.2	-0.39	1.9	0.7	34.7	-0.16	1.9	1.1	11	LA
AV2KXC	33.8	33.6	33.7	33.4	33.6	-0.62	2.2	0.2 L	34.2	-0.39	2.3	0.5	12	LA
B8RPMN_AL	38.1	37.4	38.7	38.2	38.1	1.27	2.9	0.5	37.9	1.33	2.7	1.1	12	AL
BVUTH2	40.6 *	39.1	40.0 *	39.6 *	39.8	1.99 *	2.0	0.6	40.7	2.58 *	2.4	1.1	8	XX
CC4UZA	36.8	34.3	36.0	34.8	35.5	0.17	2.2	1.1	35.5	0.21	2.2	1.1	4	LH
CT7WBM_AL	32.5	34.7	34.7	35.7	34.4	-0.29	2.3	1.4	34.3	-0.32	2.1	0.9	12	XX
CTQB47	32.6	34.0	33.8	33.5	33.5	-0.69	2.4	0.6	33.3	-0.78	2.3	0.6	12	LU
CVRNGX	41.2 *L	36.4	NO DATA	NO DATA	38.8	1.57	2.8	3.4	37.9	1.32	2.6	2.0	9	LA
CXW7LK	37.3	34.5	36.7	35.7 H	36.0	0.40	2.9	1.2	37.0	0.88	2.7	1.1	12	LA
DAM67V	29.9	32.3	31.6	31.3	31.3	-1.61	2.2	1.0	30.0	-2.29 *	2.3	1.4	12	LU
DDL2V	36.2	36.3 L	35.2 L	37.2 L	36.2	0.48	1.3	0.8	35.7	0.32	1.0	0.7	12	LH
DFB3G6	37.0	35.4	35.8	39.4 H	36.9	0.77	2.5	1.8	36.0	0.44	2.5	1.7	12	LA
DQTJ9B	33.7	34.4	34.3	32.2	33.6	-0.62	2.5	1.0	33.4	-0.76	2.3	0.7	12	LW
DQUERG	35.6	35.9	34.6	NO DATA	35.3	0.11	2.6	0.7	34.9	-0.04	2.4	1.5	11	LU
EGL634_AL	34.5	33.5	33.3	33.6	33.7	-0.59	2.2	0.5	33.6	-0.64	2.2	0.9	12	AL



Containerboard Interlaboratory Testing Program

Analysis 224

Report #630 (C)

March 2022

STFI, 56 lb Linerboard - 56G2

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	
GB87JA_AL	35.5	34.4	34.0	L 33.9	34.5	-0.27	1.8	0.7	33.9	-0.49	2.2	1.1	12	AL
GEA99B	34.8	35.7	34.9	35.0	35.1	-0.01	2.7	0.4	35.2	0.07	2.3	0.7	12	LU
GRCML2	37.5	36.4	37.3	37.3	37.1	0.86	2.4	0.5	35.9	0.42	2.8	1.5	12	LH
GWDJF3	37.7	No DATA	No DATA	No DATA	37.7	1.11	1.9	0.0	38.3	1.49	2.4	0.6	8	LU
HE2L99	31.2	33.3	31.9	34.3	32.7	-1.01	2.2	1.4	32.9	-0.97	2.0	0.9	12	LU
HWKHP2	33.2	34.1	34.5	34.4	34.1	-0.43	2.0	0.6	33.5	-0.71	2.0	0.8	8	ID
J9RMD9	33.7	33.8	34.0	33.8	33.8	-0.53	2.2	0.1	L 34.1	-0.41	2.1	0.6	12	LZ
JBLBV6	36.6	No DATA	No DATA	No DATA	36.6	0.63	2.2	0.0	37.1	0.94	2.2	0.8	8	LA
JBLBV6_AL	No DATA	No DATA	No DATA	35.2	35.2	0.03	2.4	0.0	35.4	0.16	1.9	0.5	8	AL
JL363Q	35.1	34.9	35.0	35.0	35.0	-0.03	2.9	0.1	L 31.2	-1.73	2.7	5.4	H 12	LA
LNERPV	36.1	34.9	35.2	36.8	35.8	0.29	2.4	0.9	37.0	0.89	2.4	1.1	12	LH
MBPBH9	41.2 *	40.1 *	39.1	38.2	39.7	1.93	2.1	1.3	39.1	1.86	2.6	1.2	8	LZ
NCXPJM	34.9	34.4	34.7	37.7	L 35.4	0.14	1.6	1.6	34.8	-0.11	1.5	1.0	12	TT
NDEYFU	35.0	32.9	35.0	35.5	34.6	-0.22	2.8	1.2	34.5	-0.22	2.7	1.4	10	LW
NGDACU	34.8	34.3	31.5	32.7	33.3	-0.74	2.0	1.5	34.4	-0.29	2.4	1.5	8	LY
NGDACU_AL	37.3	37.7	36.1	34.8	36.4	0.57	2.5	1.3	37.3	1.05	2.4	1.9	12	XX
NHJWPY	39.6	40.6 *H	43.4 *H	41.4 *	41.3	2.60 *	3.5	1.6	40.2	2.37 *	3.5	2.6	8	LH
NMYC9Y	31.8	27.8 X	29.3 *	30.9	L 29.9	-2.17 *	1.6	1.7	29.5	-2.53 *	1.8	2.0	8	LH
PGP974	36.1	36.0	H 36.5	H 34.7	35.8	0.32	3.3	0.8	35.5	0.20	2.6	1.4	12	LA
Q3HMBR_AL	37.4	38.0	H 35.8	37.5	37.2	0.88	2.8	0.9	36.8	0.79	2.6	0.8	12	AK
Q8G4ML	30.1	27.2 XL	21.9 X	22.8 X	25.5	-4.04 X	2.1	3.8	H 25.4	-4.40 X	2.6	3.0	H 12	LZ
Q8G4ML_AL	43.9 XL	40.6 *L	40.1 *L	39.5	L 41.0	2.51 *	0.0	2.0	43.0	3.66 X	0.0	2.6	8	XX
R9A8ZT	36.0	37.6	35.0	34.5	35.8	0.29	2.1	1.4	36.9	0.86	2.6	1.4	12	LA
RQ4A9G	33.4	34.1	34.7	33.6	33.9	-0.49	2.4	0.6	33.8	-0.57	2.3	0.7	12	LZ
TVEFQ9_AL	38.3	35.7	37.1	35.7	36.7	0.68	2.2	1.3	37.0	0.90	2.3	1.0	12	XX
U3AY8U_AL	35.3	35.6	37.5	39.0	36.9	0.75	2.3	1.7	34.9	-0.07	2.0	1.8	12	XX
V4YM3V_AL	35.1	L 34.7	33.1	34.2	34.3	-0.34	2.0	0.9	35.0	-0.02	1.9	1.0	12	XX
W8G8MP_AL	38.6	37.7	39.1	L 37.2	38.2	1.29	2.0	0.9	37.7	1.22	1.9	1.0	12	AL
WMAWJL	32.9	31.7	33.3	32.6	32.6	-1.04	1.8	0.7	32.5	-1.13	2.2	0.7	12	LY
YPNZKN	38.7	37.6	38.5	37.0	37.9	1.20	2.3	0.8	37.9	1.32	2.3	0.8	4	TT



Containerboard Interlaboratory Testing Program
 Analysis 224
STFI, 56 lb Linerboard - 56G2
 TAPPI Official Test Method T826

Report #630 (C)
March 2022

Consensus (All Labs) Results									
Wk Mean	35.02	35.12	34.80	34.98	Month Mean	35.09	Grand Mean	35.02	
Avg SDr	2.52	2.30	2.26	2.29	Avg SD	2.36	Avg SD	2.32	
SD btwn Labs	2.68	2.18	2.30	2.39	SD btwn Labs	2.37	SD btwn Labs	2.19	
Labs Incl	63	57	57	58	SD btwn Wks	1.10	SD btwn Wks	1.51	
Labs Excl	1	2	2	1	Labs Incl	64	Labs Incl	61	
Labs not Rcvd	1	6	6	6					

Key to Instrument Codes Reported by Participants

AK L & W Autoline 300 BK Buchel Strip Compression Tester BK-155 LA L&W Autoline (224 Enrollment) LU L&W 52 without moisture correction (was 53) LY L&W 152 with moisture correction TT TMI Short Span Compression, 17-34 (MB K455)	AL L & W Autoline 400 ID IDM Compression Tester LH L&W 282 LW L&W 53 with moisture correction (was 53M) LZ L&W (model not specified) XX Instrument make/model not specified by lab
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Containerboard Interlaboratory Testing Program
 Analysis 228
Roughness - Stylus Method, 42 lb Linerboard - 42F
 TAPPI Official Test Method T575

Report #630 (C)
March 2022

WebCode	Monthly Results				Cumulative Results				Inst	
	Mean	CPV	SD		Mean	CPV	SD Months	Months		
4G2LTE	141.1	0.33	18.44		143.7	0.69	3.68	2	LS	
66LD6D	148.0	0.91	9.97		149.2	1.25	3.29	4	EV	
67ZH2Q	255.3	9.94 X	31.01	H	211.3	7.54 X	47.47	H	4	EV
86GDHH	125.7	-0.97	13.72		125.6	-1.15	2.22	4	LS	
8H2XZQ	128.2	-0.76	16.22		133.9	-0.30	6.50	3	LS	
8H2XZQ_AL	141.7	0.38	15.42		136.8	-0.01	5.78	3	AL	
A33TMD_AL	139.2	0.17	10.37		135.6	-0.13	4.44	4	AL	
AE923B	119.1	-1.52	6.10	L	118.6	-1.86	5.69	4	EV	
B8RPMN_AL	224.9	7.38 X	26.53	H	189.8	5.35 X	49.99	H	4	AL
CT7WBM	162.0	2.08 *	18.27		151.1	1.44	9.08	4	EV	
CTQB47	143.3	0.51	10.32		141.9	0.51	1.60	4	EV	
CVRNGX	138.6	0.12	14.40		140.7	0.38	5.00	4	LA	
CXW7LK	112.2	-2.10 *	10.23		124.3	-1.28	8.89	4	LA	
DFB3G6	120.8	-1.38	13.40		127.0	-1.01	6.35	4	LA	
DQTJ9B	142.7	0.47	19.14		142.6	0.58	2.70	4	LA	
DQUERG	151.8	1.23	10.29		170.2	3.37 X	50.97	H	4	EV
EGL634_AL	126.2	-0.92	13.42		123.6	-1.35	7.89	4	AL	
GB87JA_AL	128.4	-0.74	14.58		122.5	-1.46	4.28	4	XX	
GRCML2	129.9	-0.62	11.13		131.1	-0.59	2.51	4	EV	
J9RMD9	145.5	0.70	11.05		148.4	1.16	4.34	4	EV	
JL363Q	135.1	-0.18	15.19		136.5	-0.05	1.22	4	LS	
MBPBH9	297.5	13.49 X	40.43	H	186.2	4.99 X	74.25	H	4	LS
NDEYFU	128.7	-0.72	10.67		130.0	-0.70	4.33	4	XX	
NGDACU_AL	115.4	-1.83	7.03	L	124.7	-1.24	7.23	4	XX	
Q3HMBR_AL	145.2	0.67	24.67		139.4	0.25	5.82	4	AK	
Q8G4ML_AL	150.5	1.12	17.28		146.7	0.99	6.42	3	AL	
R9A8ZT	149.3	1.02	31.20	H	139.6	0.27	7.60	4	LA	
RQ4A9G	135.9	-0.11	16.10		137.5	0.06	5.21	4	LS	
U3AY8U_AL	147.0	0.83	21.89		149.8	1.31	6.55	4	AL	
VVAY8T	139.2	0.17	26.67	H	133.8	-0.32	5.21	4	LS	
W8G8MP_AL	146.3	0.77	14.96		155.6	1.90	7.83	4	AL	
WMAWJL	141.9	0.39	13.79		143.4	0.65	2.28	4	EV	

Consensus (All Labs) Results			
Month Mean	137.21	Grand Mean	136.90
Avg SD	16.03	Avg SD Months	5.57
SD btwn Labs	11.89	SD btwn Labs	9.87
Labs Incl	29	Labs Incl	28



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

Report #630 (C)
March 2022

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	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 - 42F4
 TAPPI Official Test Method T538

Report #630 (C)
March 2022

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2FWEDG_AL	362.1	0.00	8.48	361.1	0.17	1.35	4	AL
499BGX	361.7	-0.02	8.10	360.9	0.15	1.33	4	XX
73AXAQ	397.5	2.37 *	6.35	401.3	3.99 X	4.87	4	TS
86GDHH_AL	343.3	-1.25	6.05	345.0	-1.36	2.39	4	AL
8H2XZQ_AL	346.2	-1.06	4.24 L	346.3	-1.23	1.85	3	AL
A33TMD_AL	350.2	-0.79	6.58	349.3	-0.95	3.37	4	AL
ABQQ67	370.1	0.54	10.93	370.7	1.08	2.48	4	PP
AC4FCP	391.5	1.96 *	5.06	384.4	2.38 *	9.19 H	4	TS
B8RPMN_AL	370.0	0.53	9.49	363.8	0.42	11.00 H	4	AL
CT7WBM	357.9	-0.28	10.61	357.7	-0.15	1.15	4	LA
CT7WBM_AL	355.9	-0.41	10.75	355.7	-0.35	3.65	4	AK
NGDACU_AL	340.1	-1.46	32.77 H	349.8	-0.90	6.60	4	XX
NHJWPY	375.6	0.90	9.77	375.1	1.50	0.89	4	HM
PGP974	365.7	0.24	9.65	366.0	0.63	2.88	4	XX
Q3HMBR_AL	349.7	-0.82	4.88 L	348.6	-1.02	4.36	4	AK
Q8G4ML_AL	360.4	-0.11	7.18	356.7	-0.25	4.76	3	AL
QJD3HX	356.5	-0.37	7.28	355.9	-0.32	2.63	4	PP
RQ4A9G	351.0	-0.74	8.04	352.7	-0.63	2.22	4	XX
TVEFQ9	358.7	-0.22	10.46	355.8	-0.33	3.06	3	PP
V4YM3V_AL	376.9	0.99	16.87	371.5	1.16	4.30	4	AL

Consensus (All Labs) Results			
Month Mean	362.05	Grand Mean	359.31
Avg SD	11.38	Avg SD Months	4.50
SD btwn Labs	14.99	SD btwn Labs	10.53
Labs Incl	20	Labs Incl	19

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
HM	Technidyne - Hagerty Model	LA	L & W Autoline (229 Enrollment)
PP	Technidyne Profile/Plus	TS	TMI Monitor/Smoothness
XX	Instrument make/model not specified by lab		



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

Report #630 (C)
March 2022

WebCode	Monthly Results				Cumulative Results				Inst
	Mean	CPV	SD		Mean	CPV	SD Months	Months	
2FWEDG	98.9	0.37	5.15		98.3	-0.01	2.96	4	TM
499BGX	110.2	1.46	7.40		109.6	0.88	2.53	4	HY
4GX92C	100.9	0.57	0.84	L	100.0	0.13	1.63	4	TM
66LD6D	94.8	-0.03	5.26		95.0	-0.27	2.18	4	TM
67ZH2Q	90.0	-0.49	5.57		89.3	-0.72	0.66	L 4	TM
86GDHH	94.2	-0.08	5.35		95.2	-0.25	2.22	4	TM
8H2XZQ	87.6	-0.72	2.51		93.2	-0.41	6.16	3	TM
AE923B	98.0	0.28	5.24		102.5	0.32	5.79	4	TM
CT7WBM	85.2	-0.95	5.07		86.8	-0.92	2.89	4	TM
DQTJ9B	145.4	4.87	X 7.06		128.4	2.36	* 15.56	4	HY
DQUERG	80.6	-1.40	1.82		87.4	-0.87	13.82	4	TM
GB87JA	95.4	0.03	5.03		97.2	-0.09	2.43	4	TM
GEA99B	100.8	0.56	4.60		104.1	0.45	2.73	4	HZ
GRCML2	85.6	-0.91	6.54		93.1	-0.42	13.61	4	SC
J9RMD9	106.5	1.11	8.97		105.8	0.58	6.50	4	HZ
KTH2RX	84.6	-1.01	11.72	H	75.7	-1.79	6.81	4	SC
MBPBH9	81.2	-1.34	2.39		87.7	-0.84	7.13	4	TM
PGP974	89.4	-0.55	3.05		88.5	-0.78	1.91	4	SC
Q3HMBR	83.2	-1.15	4.71		86.0	-0.98	2.56	4	TM
QJD3HX	104.6	0.92	3.78		106.6	0.64	2.29	4	HY
TVEFQ9	103.0	0.77	4.64		106.1	0.61	5.08	3	HY
U3AY8U	102.8	0.75	16.13	H	127.9	2.32	* 22.90	H 4	SC
V4YM3V	43.9	-4.95	X 1.58		42.3	-4.42	X 1.93	4	LZ
VVAY8T	102.0	0.67	3.61		103.8	0.42	2.09	4	HY
W8G8MP	120.0	2.41	* 3.54		110.0	0.91	9.42	4	SC
YPNZKN	81.9	-1.27	3.99		81.9	-1.30	0.00	1	TM

Consensus (All Labs) Results			
Month Mean	95.06	Grand Mean	98.40
Avg SD	6.17	Avg SD Months	8.00
SD btwn Labs	10.34	SD btwn Labs	12.69
Labs Incl	24	Labs Incl	25

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	94.24	10.25	0.82	22
Modified Scott Bond Mechanics	110.20	0.00	15.14	1



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

Report #630 (C)
March 2022

Analysis Notes

V4YM3V - Method used is not covered in this test. Data excluded from consensus calculation.

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		



Containerboard Interlaboratory Testing Program
 Analysis 234
COF Inclined Plane (Slide Angle), 42 lb Linerboard - 42F4
 TAPPI Official Test Method T815

Report #630 (C)
March 2022

WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SD	Mean	CPV	SD Months	Months
499BGX	24.0	-1.31	3.35	25.4	-0.68	1.44	3
4G2LTE	32.2	1.78	0.84	32.0	1.64	0.28	2
66LD6D	26.8	-0.27	3.17	27.2	-0.05	0.40	3
67ZH2Q	31.0	1.33	2.00	30.8	1.22	2.71	3
86GDHH	26.8	-0.27	3.27	25.4	-0.67	1.19	3
8H2XZQ	29.0	0.57	2.65	28.5	0.42	0.42	3
ANJ3NB	26.4	-0.42	1.67	25.1	-0.77	1.21	3
B8RPMN	29.3	0.70	3.16	28.4	0.36	1.32	3
CT7WBM	29.2	0.64	2.57	29.1	0.61	0.11	L 3
CTQB47	26.6	-0.34	1.14	27.5	0.05	0.76	3
CVRNGX	26.7	-0.30	2.39	26.3	-0.37	1.89	3
DDL2V	25.1	-0.91	5.21	26.8	-0.20	1.45	3
DQTJ9B	27.2	-0.11	2.59	26.1	-0.44	1.47	3
DQUERG	30.2	1.02	5.76	H 30.1	0.98	0.70	3
EGL634	29.8	0.87	1.48	29.0	0.59	1.56	3
GB87JA	29.7	0.84	3.90	28.9	0.56	0.69	3
GRCML2	30.3	1.05	1.16	28.6	0.45	2.51	3
GWDJF3	28.6	0.42	2.07	24.8	-0.89	3.36	3
J9RMD9	27.4	-0.04	1.56	24.1	-1.13	3.64	3
JBLBV6	28.5	0.38	0.87	28.1	0.25	0.64	2
JL363Q	27.0	-0.19	0.71	26.8	-0.19	0.20	L 3
MBPBH9	19.4	-3.07	X 0.55	L 20.1	-2.53	* 0.95	3
NDEYFU	22.2	-2.01	* 2.17	26.2	-0.40	3.47	3
NN9CD7	30.6	1.18	2.61	32.1	1.69	3.19	3
PGP974	25.4	-0.80	1.14	48.2	7.32	X 36.42	H 3
Q3HMBR	30.4	1.12	4.19	29.5	0.78	1.34	3
QJD3HX	24.4	-1.18	2.33	25.1	-0.77	1.27	3
RQ4A9G	28.8	0.49	3.91	30.3	1.03	1.62	3
RUPRWU	25.8	-0.65	1.92	26.3	-0.35	0.76	3
TVEFQ9	28.6	0.42	3.65	30.3	1.05	1.62	3
U3AY8U	29.4	0.72	3.65	31.1	1.33	1.92	3
V4YM3V	20.7	-2.58	* 2.71	20.3	-2.47	* 5.29	H 3
VVAY8T	28.2	0.27	2.59	28.2	0.31	0.20	L 3
W8G8MP	24.8	-1.02	0.84	24.0	-1.17	0.72	3
WMAWJL	23.8	-1.40	3.09	26.6	-0.25	2.45	3



Containerboard Interlaboratory Testing Program
Analysis 234
COF Inclined Plane (Slide Angle), 42 lb Linerboard - 42F4
TAPPI Official Test Method T815

Report #630 (C)
March 2022

Consensus (All Labs) Results			
Month Mean	27.50	Grand Mean	27.33
Avg SD	2.82	Avg SD Months	1.94
SD btwn Labs	2.64	SD btwn Labs	2.85
Labs Incl	34	Labs Incl	34

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked



Containerboard Interlaboratory Testing Program
Analysis 237

Report #630 (C)
March 2022

Air Resistance, 42 lb Linerboard - 42F

TAPPI Official Test Method T460

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
24FR2V	18.5	-2.43 *	2.07	20.2	-1.86	1.21	4	XX
2FWEDG_AL	21.5	-0.38	1.14	21.4	-0.62	0.35	4	AL
499BGX	20.0	-1.39	2.27	21.2	-0.79	1.22	4	TP
4G2LTE	20.6	-0.97	1.87	20.2	-1.85	0.72	3	XX
66LD6D	20.4	-1.14	2.99	21.2	-0.85	0.69	4	GA
67ZH2Q_AL	21.0	-0.72	2.27	22.3	0.32	0.97	4	AL
86GDHH_AL	21.0	-0.71	1.38	21.7	-0.37	0.76	4	AL
8H2XZQ	35.6	9.20 X	2.50	35.3	13.54 X	0.83	3	LP
8H2XZQ_AL	24.9	1.90	1.95	24.4	2.39 *	0.41	3	AL
A33TMD_AL	23.3	0.87	2.38	22.8	0.79	0.74	4	AL
B8RPMN_AL	22.3	0.16	3.16	21.6	-0.43	0.79	4	AL
CT7WBM_AL	21.5	-0.37	1.07	21.4	-0.65	0.96	4	AK
CTQB47	20.6	-0.99	1.32	21.2	-0.85	0.62	4	LP
CVRNGX	21.2	-0.56	1.27	21.4	-0.68	0.11 L	4	LA
CXW7LK	24.8	1.83	1.40	25.3	3.35 X	0.80	4	LA
DFB3G6	22.1	0.02	1.62	22.4	0.38	0.89	4	LA
DQTJ9B	22.6	0.36	1.78	22.4	0.34	0.65	4	LP
DQUERG_AL	22.1	0.00	2.91	23.1	1.05	0.94	4	AL
EGL634_AL	21.6	-0.33	1.00	21.4	-0.60	0.19	4	AL
FKH86A	20.4	-1.11	0.68 L	20.8	-1.29	1.34	4	LP
GB87JA_AL	23.1	0.71	1.87	22.6	0.56	0.68	4	XX
GRCML2	23.2	0.75	1.94	22.8	0.77	0.81	4	LP
GWDJF3	24.4	1.56	2.94	23.0	1.02	1.77	3	GG
J9RMD9	23.1	0.68	2.37	23.0	0.98	0.49	4	LP
JBLBV6	24.6	1.75	2.23	23.5	1.52	2.45 H	4	GG
JL363Q	22.3	0.16	1.34	22.4	0.41	0.39	4	LA
MBPBH9	23.5	0.98	3.54 H	23.4	1.41	1.69	4	TD
MWB48A	21.4	-0.45	3.87 H	22.4	0.34	1.21	4	TD
NDEYFU	21.1	-0.69	1.34	21.8	-0.24	0.76	4	LP
NGDACU_AL	21.7	-0.24	1.37	21.8	-0.26	0.52	4	XX
NHJWPY	17.3	-3.28 X	2.59	18.8	-3.29 X	2.07 H	4	LA
Q3HMBR_AL	22.2	0.10	3.89 H	23.0	0.97	1.08	4	AK
Q8G4ML_AL	20.3	-1.19	1.98	20.8	-1.23	0.69	3	XX
QJD3HX	21.6	-0.30	2.78	21.5	-0.48	0.57	4	TP
R9A8ZT	25.9	2.60 *	1.73	26.8	4.84 X	0.61	4	LA
RQ4A9G	20.7	-0.92	2.24	22.0	0.02	1.84	4	GA
TNW4ET	22.7	0.45	0.77 L	22.8	0.83	0.72	4	LP
TVEFQ9	23.2	0.78	3.51 H	22.4	0.41	0.96	3	TP
U3AY8U_AL	22.2	0.09	1.92	22.4	0.36	0.60	4	AL



Containerboard Interlaboratory Testing Program
Analysis 237

Report #630 (C)
March 2022

Air Resistance, 42 lb Linerboard - 42F

TAPPI Official Test Method T460

WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
U86QD7	21.8	-0.18	1.81	22.6	0.56	0.97	4	GG
UYAVAG	20.7	-0.93	1.25	20.0	-2.03 *	0.61	3	LP
V4YM3V_AL	22.1	0.06	1.05	23.5	1.45	1.17	4	AL
VVAY8T	22.4	0.24	1.38	22.1	0.08	0.32	4	LP
W8G8MP_AL	21.3	-0.52	0.82 L	21.3	-0.71	0.48	4	AL
YVDTFN	22.7	0.46	2.64	20.9	-1.15	2.02	4	GG

Consensus (All Labs) Results			
Month Mean	22.07	Grand Mean	22.03
Avg SD	2.15	Avg SD Months	1.01
SD btwn Labs	1.47	SD btwn Labs	0.98
Labs Incd	43	Labs Incd	41

Key to Instrument Codes Reported by Participants

- | | |
|---|---|
| AK L & W Autoline 300 | 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

Report #630 (C)
March 2022

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM12

TAPPI Official Test Method T809

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
24FR2V	57.1	54.6	53.1	50.1 *	53.7	-1.62	3.6	2.9	56.5	-0.78	3.5	2.5	16	LD
28F4XV	67.5 X	65.8 X	64.3 *	65.9 *L	65.9	2.62 *	3.9	1.3	65.0	2.56 *	4.5	2.7	16	LC
499BGX	61.8	62.5	58.0	59.3	60.4	0.71	3.6	2.1	58.8	0.12	4.1	2.4	16	LC
4C7YRD	66.0 X	58.3	56.0	60.0	60.1	0.60	3.7	4.3 H	61.8	1.30	4.1	3.2	16	LD
4GCRLA	56.0	56.1	54.3	53.0	54.9	-1.23	3.7	1.5	55.2	-1.30	3.4	1.3	16	LD
4QMU8A	59.5 L	59.5	59.6 L	59.6 L	59.5	0.40	1.2	0.1 L	59.6	0.43	1.1	0.2 L	16	LD
4WE4G9	57.5	58.0	57.5	58.4	57.9	-0.18	5.0	0.4	58.5	-0.02	4.9	1.1	16	TJ
66LD6D	56.9	59.4	58.5	57.2	58.0	-0.13	3.5	1.2	57.0	-0.61	3.8	2.0	16	LD
8H2XZQ	55.2	54.0	53.9	50.8 *	53.5	-1.71	4.0	1.9	53.9	-1.83	3.7	2.3	12	LD
8MU6D8	57.4	56.9	56.9	56.4	56.9	-0.52	2.1	0.4	57.0	-0.61	2.4	0.8	16	EN
8MYCNF	58.2 L	58.3 L	58.4 L	58.3 L	58.3	-0.03	1.1	0.1 L	58.5	-0.02	1.4	0.2 L	16	LD
8P2DND	59.9	57.6	65.4 *	56.6 L	59.9	0.53	2.9	3.9 H	60.2	0.67	3.7	2.9	16	LD
8QDCHL	60.3	59.1	57.3	61.2	59.4	0.38	3.0	1.7	61.2	1.06	4.2	2.4	16	LD
8V87FM	58.6	54.6	57.0	56.8	56.8	-0.57	3.2	1.7	57.4	-0.42	3.4	1.8	16	EM
99CU4B	58.9	58.7	56.6	58.3	58.1	-0.09	3.2	1.0	57.3	-0.48	3.2	1.1	16	LZ
AE923B	58.8	58.9	61.2	61.7	60.2	0.62	3.4	1.5	59.9	0.55	3.2	1.7	16	LC
BWA8UH	60.5 L	60.3	60.4	60.2 L	60.3	0.69	1.8	0.1 L	60.5	0.76	1.7	0.2 L	16	MB
CC4UZA	59.9	57.6	60.1	61.1	59.7	0.45	3.8	1.5	60.7	0.86	3.6	2.8	16	LD
CVRNGX	51.5 X	52.6 *	No DATA	No DATA	52.1	-2.21 *	4.0	0.8	54.6	-1.55	5.3	1.9	13	MB
CXW7LK	46.2 X	50.9 *	48.6 X	48.9 *	48.6	-3.41 X	3.0	1.9	50.1	-3.32 X	3.1	1.8	16	MB
D3PMD6	59.0	58.7	58.0	57.9	58.4	0.01	3.7	0.5	58.4	-0.06	3.3	0.5 L	16	LC
DAM67V	61.5 L	62.3	61.0 L	61.5	61.6	1.11	2.2	0.6	58.5	-0.02	3.8	2.3	16	TH
DDLDF2V	62.8	62.2	61.8	62.4	62.3	1.37	4.4	0.4	61.2	1.03	3.8	1.3	16	LD
DQTJ9B	56.7	57.5	56.4	53.2	55.9	-0.86	3.7	1.9	56.8	-0.67	3.4	1.7	16	LD
DQUERG	71.8 X	59.0	70.4 X	60.9	65.5	2.50 *	3.6	6.5 H	60.7	0.87	3.6	4.9 H	14	LC
E279EU	57.9	53.7	54.8	53.3	54.9	-1.21	2.9	2.1	56.6	-0.78	3.3	2.1	16	TH
EGL634	58.7	59.9	60.8	65.9 *	61.3	1.04	4.2	3.1	61.4	1.14	4.0	2.3	16	LZ
F8FGNC	56.4 L	56.9	55.7 L	55.9	56.2	-0.76	1.8	0.6	55.9	-1.05	2.9	1.3	16	LD
FKH86A	59.0	61.0	61.9	58.6	60.1	0.61	4.8	1.5	58.6	0.02	4.0	1.9	16	LD
GEA99B	60.6	58.6	58.2	57.2	58.7	0.10	3.3	1.5	59.7	0.46	3.3	1.8	16	LD
GYV3XB	56.3 L	55.7 L	55.8 L	54.8 L	55.7	-0.95	1.3	0.6	57.6	-0.37	1.1	3.0	16	TU
H6Y8MA	58.6	59.0	59.4	59.7	59.2	0.28	3.6	0.5	58.7	0.08	3.4	0.5 L	16	LD
HE2L99	60.4	58.8	58.0	54.5	57.9	-0.16	3.6	2.5	56.5	-0.80	3.9	2.3	16	LD
HWKHP2	59.2	59.6	57.0	57.9	58.4	0.03	3.0	1.2	58.0	-0.20	3.3	1.9	12	LD
J9RMD9	62.1	58.1	55.8	59.3	58.8	0.17	4.9	2.6	59.1	0.23	4.0	2.1	16	LZ



Containerboard Interlaboratory Testing Program
Analysis 240

Report #630 (C)
March 2022

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM12

TAPPI Official Test Method T809

WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	
JBLBV6	61.7	No DATA	No DATA	No DATA	61.7	1.15	3.1	0.0	63.5	1.95 *	2.8	1.6	11	LZ
JL363Q	58.7 L	58.7 L	58.5	58.9 L	58.7	0.12	1.5	0.2 L	58.6	0.03	1.7	0.3 L	16	LD
KTH2RX	54.4	58.7	55.9	55.4	56.1	-0.79	4.2	1.8	55.2	-1.31	3.7	1.5	16	LC
LNERPV	61.7	62.6	61.9	58.9	61.3	1.02	2.8	1.6	61.7	1.24	3.8	1.1	16	LD
LRGQ7E	57.6 L	57.0	58.3	63.0	59.0	0.21	2.8	2.7	59.4	0.34	2.7	2.3	16	LC
MWB48A	50.4 X	52.3 *	51.2 *	48.7 *	50.7	-2.70 *	3.9	1.5	50.2	-3.27 X	3.8	1.9	13	TH
NB6VJX	58.6 H	56.7	56.0	60.0 H	57.8	-0.20	12.8	1.8	53.8	-1.87	10.6	5.8 H	12	XX
NCXPJM	55.9	59.4	58.3	58.3	58.0	-0.14	5.1	1.5	58.3	-0.09	5.9	0.8	16	TG
NDEYFU	59.6	60.4	62.3	59.6	60.5	0.74	3.6	1.3	60.5	0.79	3.7	1.7	16	LD
NGDACU	59.7	56.3	62.9	60.4	59.8	0.51	4.2	2.7	61.7	1.26	4.2	2.6	16	LD
Q3HMBR	55.9	56.1	59.6	58.4	57.5	-0.30	4.4	1.8	57.5	-0.40	4.0	2.1	16	LD
Q8G4ML	56.3	55.6	57.1	56.7	56.4	-0.68	3.6	0.7	56.8	-0.69	3.4	2.1	16	LD
QJD3HX	57.3	56.5	56.7	55.9	56.6	-0.62	2.9	0.6	56.2	-0.92	3.3	1.0	16	LD
R9A8ZT	60.8	58.6 L	55.3	54.2	57.2	-0.40	3.6	3.0	56.2	-0.92	4.2	3.3	16	TU
RQ4A9G	57.7	57.7	57.3	55.9	57.2	-0.42	4.0	0.9	57.7	-0.34	3.5	1.1	16	LZ
RUPRWU	59.8	61.0	62.3	62.1	61.3	1.03	4.3	1.1	60.7	0.86	4.4	1.5	16	LZ
TNW4ET	57.3	56.8	56.7	56.8	56.9	-0.52	3.0	0.3 L	57.8	-0.28	3.2	1.4	16	LD
TVEFQ9	53.9 *	54.9	56.0	55.8	55.1	-1.13	2.8	1.0	54.9	-1.41	3.5	1.3	12	LD
UPMPH4	57.3	58.3 H	58.0	57.6	57.8	-0.20	4.2	0.4	57.8	-0.29	4.2	0.4 L	4	LD
V4YM3V	54.5	55.6	55.1	56.4	55.4	-1.04	3.0	0.8	54.1	-1.72	2.6	1.5	16	LD
VVAY8T	No DATA	No DATA	No DATA	60.3 L	60.3	0.66	1.9	0.0	59.9	0.54	2.1	0.3 L	4	LD
WMAWJL	53.5 *H	57.8	60.7	57.9	57.5	-0.32	8.9	3.0	58.7	0.07	5.5	2.1	16	EN
WVKY6M	58.1	58.4	58.9	59.4	58.7	0.12	3.3	0.6	58.7	0.07	3.1	0.5 L	16	LD
Z9WKVH	62.8 *	63.1 *	64.1 *	65.3 *	63.8	1.91	4.2	1.1	64.9	2.51 *	4.2	1.8	16	TX

Consensus (All Labs) Results														
Wk Mean	58.44	57.88	58.26	57.94	Month Mean	58.37			Grand Mean	58.53				
Avg SDr	4.55	3.44	3.55	4.39	Avg SD	3.99			Avg SD	3.87				
SD btwn Labs	2.26	2.58	2.94	3.69	SD btwn Labs	2.86			SD btwn Labs	2.54				
Labs Incl	52	56	54	57	SD btwn Wks	1.92			SD btwn Wks	2.06				
Labs Excl	6	1	2	0	Labs Incl	58			Labs Incl	56				
Labs not Rcvd	1	2	3	2										



Containerboard Interlaboratory Testing Program
Analysis 240
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T809

Report #630 (C)
March 2022

Key to Instrument Codes Reported by Participants

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



Containerboard Interlaboratory Testing Program
Analysis 250

Report #630 (C)
March 2022

Fluted Edge Crush Strength (FCF), 26 lb Corrugating Medium - CM12

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	
499BGX	68.4	71.1	67.7	73.9	70.3	0.79	3.5	2.8	70.7	0.81	3.1	1.9	16	LC
4NGMNH	67.2 L	67.2	68.1	67.6 L	67.5	-0.82	1.6	0.4	67.7	-0.91	2.2	0.8	16	LD
8H2XZQ	70.1	70.1	71.7	67.9	70.0	0.59	3.6	1.6	65.4	-2.20 *	5.7	5.2 H	12	LD
8MYCNF	69.3	69.4	69.3	69.3	69.3	0.23	1.7	0.0 L	69.5	0.10	1.7	0.2 L	16	LD
99CU4B	68.4	69.0	67.6	67.6	68.1	-0.45	3.3	0.7	68.1	-0.65	3.1	1.2	16	LZ
BWA8UH	68.4	68.3	68.9	68.4	68.5	-0.25	1.6	0.2 L	69.0	-0.15	1.7	1.2	16	MB
D3PMD6	69.0	68.3	69.4	68.7	68.9	-0.04	2.9	0.5	69.2	-0.04	3.3	0.5 L	16	LD
DAM67V	64.3 *	62.8 *	61.8 *	62.4 *	62.8	-3.54 X	2.3	1.0	62.9	-3.62 X	2.7	1.3	16	TH
DQTJ9B	70.7	74.6 *	72.5	72.6	72.6	2.13 *	3.5	1.6	73.1	2.18 *	3.8	1.5	16	LD
DQUERG	60.9 X	68.0	62.5 *H	74.1	66.4	-1.48	4.6	6.0 H	69.5	0.15	4.2	4.1 H	14	LC
EGL634	66.2	69.2	66.4	65.8	66.9	-1.19	4.0	1.5	66.9	-1.32	3.3	1.8	16	LZ
FKH86A	69.2	68.8 H	65.2	71.1	68.6	-0.19	4.4	2.5	69.9	0.33	3.8	1.6	16	LD
HWKHP2	67.2	67.0	66.1	66.7	66.7	-1.26	3.1	0.5	68.6	-0.36	2.9	1.9	12	LD
JL363Q	69.0	69.0	69.2 L	69.2 L	69.1	0.10	1.4	0.1 L	68.9	-0.24	1.6	0.3 L	16	LD
NDEYFU	67.4	67.1	68.2	68.3	67.8	-0.68	3.9	0.6	69.0	-0.13	4.0	1.2	16	LD
NHJWPY	67.9	68.1	68.4	68.0	68.1	-0.47	2.6	0.2 L	60.1	-5.17 X	3.2	8.4 H	16	LD
Q3HMBR	70.1	63.6 *	69.8	70.1	68.4	-0.31	4.1	3.2	68.7	-0.35	3.7	2.0	16	LD
QJD3HX	72.8 *	72.6	72.2	74.2	73.0	2.33 *	3.3	0.9	72.7	1.92 *	3.1	1.0	16	LD
TNW4ET	69.4	71.2	72.7	69.5	70.7	1.03	3.1	1.6	69.8	0.31	3.4	1.8	16	LD
TVEFQ9	68.0	69.4	69.7	NO DATA	69.0	0.06	3.3	0.9	69.1	-0.12	3.6	1.0	11	LD
V4YM3V	68.4	68.6	68.9	69.1	68.7	-0.11	3.4	0.3 L	70.5	0.68	3.2	1.6	16	LD

Consensus (All Labs) Results													
Wk Mean	68.58	68.73	68.39	69.22	Month Mean	68.93	Grand Mean	69.27					
Avg SDr	3.03	3.34	3.06	3.47	Avg SD	3.28	Avg SD	3.37					
SD btwn Labs	1.76	2.61	2.89	2.92	SD btwn Labs	1.73	SD btwn Labs	1.77					
Labs Incl	20	21	21	20	SD btwn Wks	1.91	SD btwn Wks	2.01					
Labs Excl	1	0	0	0	Labs Incl	20	Labs Incl	19					
Labs not Rcvd	0	0	0	1									

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)	MB	Messmer Buchel K440
TH	TMI Compression Tester, Model 17-76		



Containerboard Interlaboratory Testing Program
 Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM12
 TAPPI Official Test Method T822

Report #630 (C)
March 2022

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
24FR2V	48.2	45.5	47.6	46.4	46.9	1.48	3.9	1.2	43.8	-0.47	3.8	2.3	16	LD
28F4XV	37.0 *	36.2 *	37.5 *	36.2 X	36.7	-4.19 X	3.8	0.6	35.0	-8.08 X	4.0	1.5	16	XX
499BGX	44.3	44.8	42.9	45.9	44.5	0.12	3.6	1.3	45.4	0.92	3.6	1.9	16	LC
4C7YRD	44.8	43.7	40.1	45.8	43.6	-0.36	3.9	2.5	46.7	2.08 *	3.6	2.7	16	LD
4QMU8A	45.7 L	45.8 L	45.7 L	45.7 L	45.7	0.83	0.5	0.0 L	45.7	1.20	0.8	0.1 L	16	LD
8P2DND	43.9	46.3	46.6	44.2	45.3	0.56	4.1	1.4	45.1	0.70	3.5	1.4	16	LZ
8QDCHL	39.1	36.5 *	43.3	43.0	40.5	-2.10 *	3.6	3.2 H	44.1	-0.17	3.8	3.6	16	EM
8V87FM	47.3	44.7	47.9	45.0	46.2	1.09	3.1	1.6	45.8	1.31	3.4	2.3	16	EM
BWA8UH	43.6	43.5	43.6	43.5	43.5	-0.40	1.8	0.1 L	43.5	-0.68	1.6	0.9	16	MB
CC4UZA	45.7	45.9	45.8 H	44.6	45.5	0.70	3.8	0.6	46.0	1.50	3.4	1.3	16	LD
CVRNGX	41.7	43.7	No DATA	No DATA	42.7	-0.85	4.4	1.4	44.8	0.45	4.0	3.2	14	MB
DAM67V	44.4	42.6	41.0	43.0	42.8	-0.83	2.4	1.4	41.2	-2.75 X	2.9	1.8	16	TH
DQTJ9B	45.2	43.4	45.7	44.0	44.6	0.18	2.7	1.1	44.7	0.30	3.3	1.2	16	XX
E279EU	38.1 *	35.8 *	39.2	34.8 X	37.0	-4.05 X	2.3	2.0	37.1	-6.26 X	2.6	1.8	16	TH
F8FGNC	46.4	46.3	45.5	46.0	46.0	0.99	2.3	0.4	44.6	0.28	2.4	1.0	16	LC
FKH86A	42.9	45.8	40.9	42.8	43.1	-0.63	2.8	2.0	43.7	-0.55	3.2	1.8	16	LD
GEA99B	44.5	41.8	44.9	43.5	43.7	-0.32	2.8	1.4	44.2	-0.10	3.0	1.4	16	LD
GYV3XB	44.7 L	44.6	44.3 L	44.9 L	44.6	0.22	1.2	0.2 L	43.3	-0.85	1.0	1.4	16	TU
H6Y8MA	44.1	43.7	43.3	44.0	43.8	-0.26	3.9	0.3	43.8	-0.43	3.2	0.5 L	16	LD
JL363Q	44.5	44.1	44.4	44.8	44.5	0.11	3.0	0.3	44.1	-0.17	2.8	0.4 L	16	LD
LRGQ7E	48.1	47.6	47.8	49.7 X	48.3	2.27 *	2.5	1.0	47.9	3.17 X	2.5	1.3	16	LC
Q8G4ML	44.5	38.7	43.1	40.6 *	41.7	-1.41	2.8	2.6	43.5	-0.67	3.6	2.2	16	LD
QJD3HX	44.8	45.9	44.3	44.0	44.8	0.29	2.4	0.8	45.7	1.25	2.7	1.6	16	LD
RJ96K8	44.3	46.6	44.6	45.9	45.4	0.62	3.1	1.1	43.7	-0.57	3.0	1.5	16	TH
RQ4A9G	39.3	40.1	45.3	43.6	42.1	-1.20	3.1	2.8	41.9	-2.06 *	3.0	1.7	16	LD
TNW4ET	42.2	42.1	44.5	42.2	42.7	-0.85	3.1	1.2	42.5	-1.60	3.5	1.2	16	LD
TVEFQ9	42.1	43.6	41.7	43.1	42.6	-0.90	3.7	0.9	43.3	-0.85	3.6	1.3	12	LD
V4YM3V	42.7	41.6	44.0	42.9	42.8	-0.81	2.9	1.0	43.3	-0.88	2.7	1.4	16	LD
Z9WKVH	47.8	46.1	46.0	47.7 *	46.9	1.47	4.0	1.0	44.4	0.04	3.9	2.7	16	LZ

Consensus (All Labs) Results									
Wk Mean	43.86	43.35	43.98	44.29	Month Mean	44.25		Grand Mean	44.31
Avg SDr	2.97	3.08	3.07	3.28	Avg SD	3.15		Avg SD	3.17
SD btwn Labs	2.80	3.18	2.56	1.57	SD btwn Labs	1.80		SD btwn Labs	1.15
Labs Incl	29	29	28	25	SD btwn Wks	1.46		SD btwn Wks	1.83
Labs Excl	0	0	0	3	Labs Incl	27		Labs Incl	25
Labs not Rcvd	0	0	1	1					

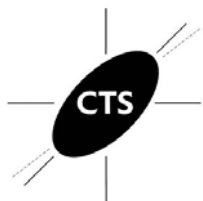


Containerboard Interlaboratory Testing Program
Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T822

Report #630 (C)
March 2022

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 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	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)	XX	Instrument make/model not specified by lab



Containerboard Interlaboratory Testing Program
 Analysis 261
STFI, 26 lb Corrugating Medium - CM12
 TAPPI Official Test Method T826

Report #630 (C)
March 2022

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	
499BGX	14.0	14.0	14.7	13.8	14.1	0.71	1.0	0.4	13.9	0.03	1.0	0.3	16	LU
4WE4G9	13.9	14.1	13.5	14.1	13.9	0.37	1.1	0.3	14.0	0.25	1.1	0.3	16	TT
66LD6D	13.1	12.4 *	12.5	12.1 *	12.5	-2.15 *	1.0	0.4	13.1	-1.67	1.0	0.6	16	LU
7L79B9	13.8 L	14.2	12.2	13.1	13.3	-0.73	1.1	0.9	13.6	-0.53	1.1	0.7	16	LA
86GDHH	13.8	13.9	14.0	13.8	13.9	0.29	1.1	0.1	13.9	0.08	1.1	0.3	16	LA
8H2XZQ	13.7	14.1	13.1 L	13.7	13.7	-0.10	0.9	0.4	13.7	-0.38	1.1	0.3	12	LA
8MU6D8	13.2	12.8	13.1	12.9	13.0	-1.27	0.9	0.2	13.1	-1.55	1.0	0.3	16	LH
8MYCNF	13.8 L	13.8 L	13.8 L	13.7 L	13.8	0.09	0.3	0.0 L	13.8	-0.20	0.4	0.1 L	16	LA
AV2KXC	12.5	13.7	13.7	13.1	13.3	-0.79	1.0	0.6	13.9	-0.08	1.0	0.6	16	LA
CC4UZA	2.5 XL	2.5 XL	2.6 XL	2.5 XL	2.5	-20.01 X	0.2	0.1	8.5	-11.17 X	0.8	6.4 H	8	XX
CVRNGX	15.0	14.3 H	No DATA	No DATA	14.6	1.63	1.5	0.5	15.0	2.28 *	1.1	0.9	14	LA
CXW7LK	13.6	13.8	13.3	14.2	13.7	0.04	1.3	0.4	14.4	1.01	1.2	0.7	16	LA
D3PMD6	13.3	12.9	14.0	14.1	13.6	-0.23	0.9	0.6	13.6	-0.56	0.9	0.4	16	LB
DAM67V	12.4 *	13.0 L	12.1 *L	12.5	12.5	-2.16 *	0.5	0.4	12.3	-3.31 X	0.9	0.5	16	LZ
DDLF2V	14.6	14.6	14.4	14.9	14.6	1.67	0.8	0.2	14.6	1.52	0.6	0.5	16	LH
F8FGNC	14.1	13.6	13.8 H	13.4	13.7	-0.03	1.1	0.3	13.9	-0.07	1.1	0.5	16	LH
JL363Q	14.0	13.9	13.9	14.0	13.9	0.39	1.1	0.0 L	13.9	-0.09	1.2	0.1 L	16	LB
MWB48A	13.1	13.7	12.9	14.2	13.5	-0.41	1.2	0.6	14.2	0.72	1.2	2.9 H	11	TX
Q3HMBR	15.3 *H	13.9	14.7	14.4	14.6	1.53	1.2	0.6	14.8	1.77	1.2	0.5	16	LA
Q8G4ML	9.7 XH	6.9 X	6.6 X	8.5 X	7.9	-10.32 X	1.2	1.4 H	8.3	-11.43 X	1.4	1.0	16	LZ
R9A8ZT	14.2	14.7	12.8	14.0	13.9	0.39	1.1	0.8	13.7	-0.38	1.1	0.5	16	LA
RQ4A9G	13.3	13.6	13.3	13.8	13.5	-0.36	1.1	0.3	13.5	-0.71	1.0	0.3	16	LZ
TVEFQ9	14.0	13.3	14.6	14.4	14.1	0.64	1.1	0.6	13.9	-0.01	1.2	0.6	12	LB
V4YM3V	13.8	14.0	13.6	14.7	14.0	0.60	0.9	0.4	13.9	0.01	0.9	0.5	16	LA
XGVMMA	13.7	13.0	13.9 H	14.1	13.7	-0.10	1.3	0.5	13.2	-1.45	1.2	1.1	16	LA

Consensus (All Labs) Results										
Wk Mean	13.74	13.71	13.54	13.76	Month Mean	13.71		Grand Mean	13.90	
Avg SDr	1.03	1.10	1.05	1.01	Avg SD	1.06		Avg SD	1.05	
SD btwn Labs	0.67	0.58	0.75	0.70	SD btwn Labs	0.56		SD btwn Labs	0.49	
Labs Incl	23	23	22	22	SD btwn Wks	0.46		SD btwn Wks	0.81	
Labs Excl	2	2	2	2	Labs Incl	23		Labs Incl	22	
Labs not Rcvd	0	0	1	1						



Containerboard Interlaboratory Testing Program
Analysis 261
STFI, 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T826

Report #630 (C)
March 2022

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)	TT	TMI Short Span Compression, 17-34 (MB K455)
TX	TMI (model not specified)	XX	Instrument make/model not specified by lab