Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BX15	Top to Bottom Box Compression Strength, Corrugated Boxes
202	EC13	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC13	Edgewise Compressive Strength by T839, Corrugated Board
205	42F4	Bursting Strength (Mullen), 42 lb Linerboard
206	56G2	Bursting Strength (Mullen), 56 lb Linerboard
215	42F4	Ring Crush, 42 lb Linerboard
216	56G2	Ring Crush, 56 lb Linerboard
223	42F4	STFI, 42 lb Linerboard
224	56G2	STFI, 56 lb Linerboard
228	42F	Roughness - Stylus Method, 42 lb Linerboard
229	42F4	Roughness - Sheffield Method, 42 lb Linerboard
231	42F	Internal Bond, 42 lb Linerboard
234	42F	COF Inclined Plane (Slide Angle), 42 lb Linerboard
237	42F4	Air Resistance, 42 lb Linerboard
240	CM12	Flat Crush Strength (CMT), 26 lb Corrugating Medium
250	CM12	Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium
255	CM12	Ring Crush (RCT), 26 lb Corrugating Medium
261	CM12	STFI, 26 lb Corrugating Medium

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 Incld	-	The number of laboratory Means included in the Wk Mean for that week.
Labs Excld	-	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 Incld   -   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:

Flag   **Explanation**

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 variabilty between weekly means (high week-to-week variation).

    L   Indicates low variabilty between weekly means (low week-to-week variation).

Containerboard Interlaboratory Testing Program
Analysis 201
Report #624 (K)
September 2021
Top to Bottom Box Compression Strength, Corrugated Boxes - BX15
TAPPI Official Test Method T804

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
63EVA6	784.0	-0.43	54.77		808.3	-0.07	38.56	4	LG
6MHN6C	879.5	0.98	30.91		844.2	0.65	32.98	4	LS
7EJKG6	825.2	0.18	33.85		838.3	0.53	21.79	4	LG
7JCMFY	852.4	0.58	85.69		826.3	0.29	31.41	4	ER
ABU4YW	836.8	0.35	14.67 L		813.4	0.03	22.84	4	LM
AVDEFZ	826.4	0.20	65.20		852.0	0.81	19.73	4	EX
BEA3J4	761.8	-0.76	17.49		756.4	-1.11	12.23	4	LL
CJY2B6	762.0	-0.76	93.32		776.8	-0.70	20.70	4	ET
E8JQ36	828.6	0.23	23.37		804.1	-0.15	37.38	4	ER
E8TXY7	883.8	1.05	44.33		878.3	1.33	19.66	4	EM
ECNPAN	935.0	1.81	23.34		919.6	2.16 *	10.82	4	EX
EZXZC4	734.6	-1.16	69.89		727.1	-1.70	10.37	4	LG
FAX2BT	866.6	0.79	62.46		828.0	0.33	32.34	4	LG
GYET3R	751.3	-0.92	109.91		804.0	-0.16	40.15	4	LL
JBF92R	780.8	-0.48	94.87		814.3	0.05	34.08	4	EX
JZWPL2	866.6	0.79	50.41		813.9	0.04	42.94	4	ES
KWFQMD	807.5	-0.08	37.40		784.8	-0.54	44.28	4	LL
LDFWUM	638.4	-2.59 *	40.00		698.6	-2.27 *	77.62 H	4	TB
N9DW8M	832.7	0.29	36.87		784.7	-0.54	44.44	4	LH
TMKFTA	882.0	1.02	31.33		865.4	1.07	15.47	4	ER
WTRC3L	855.5	0.63	60.72		826.8	0.30	45.18	4	LG
XLBXZF	832.9	0.29	38.02		855.5	0.88	17.66	4	LG
XTBDPN	884.6	1.06	65.85		842.6	0.62	41.36	4	ER
Y3RQY4	751.4	-0.91	134.30 H		755.6	-1.13	28.63	4	LM
Y9JT8A	668.2	-2.15 *	92.86		706.1	-2.12 *	71.09	4	LS
YNV9A6	892.4	1.18	21.30		848.0	0.73	39.25	4	EX
YTAXY9	788.2	-0.37	46.68		855.7	0.88	53.55	4	LO
ZRCTWK	811.6	-0.02	101.93		819.8	0.16	17.76	4	EX
ZUWZW9	759.8	-0.79	89.88		793.1	-0.37	47.14	4	LS

Consensus (All Labs) Results

Month Mean	813.12		Grand Mean	811.78
Avg SD	65.38		Avg SD Months	37.27
SD btwn Labs	67.43		SD btwn Labs	49.90
Labs Incld	29		Labs Incld	29

Containerboard Interlaboratory Testing Program
Analysis 201
Top to Bottom Box Compression Strength, Corrugated Boxes - BX15
TAPPI Official Test Method T804

Report #624 (K)
September 2021

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	796.06	88.40	17.06	8
Water based adhesive sealing	883.80	0.00	70.68	1
Clip sealing	816.41	58.53	3.29	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

Containerboard Interlaboratory Testing Program
Analysis 202
Edgewise Compressive Strength, by T811, Corrugated Board - EC13
TAPPI Official Test Method T811

Report #624 (K)
September 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
6MHN6C	44.8	0.52	1.98		43.8	0.15	0.69	4	LD
7EJKG6	46.7	1.66	1.43		45.2	0.77	1.50	4	EM
A74TPX	41.4	-1.53	1.58		39.0	-1.98 *	2.01	4	LD
E8JQ36	43.2	-0.44	3.81 H		43.7	0.09	1.31	4	EN
ECNPAN	44.6	0.40	1.47		43.5	-0.01	1.29	4	LC
FAX2BT	43.4	-0.32	2.50		42.8	-0.31	1.11	4	LE
K4CLMX	42.2	-1.05	1.31		42.3	-0.52	2.22	4	XX
N9DW8M	42.6	-0.78	2.02		42.6	-0.38	0.00	1	EM
PK7KYF	45.3	0.81	3.50		47.0	1.52	1.28	4	XX
PZ3ULL	46.1	1.29	1.05		47.0	1.56	0.87	4	LC
Y9JT8A	31.0	-7.70 X	1.67		32.3	-4.91 X	1.74	4	EM
YP6EPE	42.3	-0.97	0.48 L		41.0	-1.08	1.25	3	TF
ZRCTWK	44.7	0.44	3.12		43.9	0.19	1.40	4	LC

Consensus (All Labs) Results

Month Mean	43.94		Grand Mean	43.49
Avg SD	2.24		Avg SD Months	1.42
SD btwn Labs	1.68		SD btwn Labs	2.28
Labs Incld	12		Labs Incld	12

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series		EN	Emerson 2200
LC	L&W Crush Tester 48		LD	L&W Crush Tester 248
LE	L&W Crush Tester 840		TF	TMI Digital Crush Tester, Model 17-19
XX	Instrument make/model not specified by lab			

Containerboard Interlaboratory Testing Program

Analysis 203

Edgewise Compressive Strength by T839, Corrugated Board - EC13

TAPPI Official Test Method T839

Report #624 (K)
September 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
4NZCTX	35.9	-3.98 X	3.48	H	36.5	-3.70 X	1.88	4	XX
6MHN6C	47.8	0.92	0.97		45.1	-0.08	2.06	4	LD
7HJRXW	46.2	0.27	0.95		45.9	0.25	0.83	4	LC
7JCMFY	45.5	-0.02	1.46		45.4	0.06	0.85	4	LD
A74TPX	40.1	-2.27 *	1.42		40.7	-1.93 *	1.96	4	LD
ABU4YW	45.5	-0.04	1.79		45.7	0.16	0.23 L	4	EM
AVDEFZ	39.5	-2.50 *	1.69		42.2	-1.29	1.84	4	CT
BYVYZU	35.8	-4.01 X	0.88		35.4	-4.14 X	3.93 H	4	TK
CJY2B6	43.3	-0.94	1.84		43.2	-0.86	1.07	4	TD
E8JQ36	46.6	0.42	1.96		46.2	0.37	0.42	4	EN
E8TXY7	41.2	-1.81	4.07	H	40.3	-2.11 *	1.58	4	TH
ECNPAN	48.1	1.03	0.60	L	47.9	1.09	1.13	4	LC
EDHFE3	42.4	-1.29	3.25	H	42.4	-1.19	0.00	1	TU
FAX2BT	46.8	0.50	1.19		46.5	0.51	0.50	4	LY
GAWAVX	44.8	-0.34	1.72		43.8	-0.63	2.00	4	XX
GYET3R	47.1	0.60	0.85		46.5	0.50	0.99	4	BU
JBF92R	45.8	0.07	1.57		45.8	0.20	1.08	4	TL
JZWPL2	48.0	0.97	0.97		47.3	0.85	0.52	4	LD
K4CLMX	43.0	-1.08	1.39		43.4	-0.79	0.78	4	XX
KWFQMD	44.9	-0.30	0.64	L	44.0	-0.52	1.70	4	LC
LDFWUM	49.5	1.62	0.44	L	48.6	1.40	2.12	4	LD
LU723F	47.0	0.59	1.13		46.0	0.30	1.60	4	XX
N83WBT	48.2	1.07	0.73	L	47.1	0.77	2.45	4	EM
PK7KYF	47.9	0.96	2.18		47.2	0.81	0.84	4	XX
PZ3ULL	46.4	0.35	1.56		47.1	0.77	0.58	4	LC
T8RLMB	47.3	0.71	1.12		47.4	0.90	0.76	4	LD
TMKFTA	46.6	0.40	0.94		45.9	0.27	0.57	4	EM
UZLA4J	45.2	-0.15	2.63		43.0	-0.97	3.06 H	4	TD
XJNJC7	46.3	0.30	2.10		47.6	0.99	0.89	4	TG
XLBXZF	48.5	1.18	1.23		49.5	1.79	1.02	4	MK
XTBDPN	48.4	1.14	1.75		47.1	0.75	1.07	4	LD
Y3RQY4	42.8	-1.14	1.86		43.4	-0.78	1.37	4	TG
Y9JT8A	43.1	-1.03	1.37		41.2	-1.73	1.44	4	EM
YNV9A6	44.8	-0.33	2.38		44.8	-0.20	1.20	4	LD
YP6EPE	45.5	-0.04	0.53	L	43.2	-0.90	2.04	4	TD
YTAXY9	43.4	-0.91	1.54		43.1	-0.93	0.55	4	LD
ZL2396	35.3	-4.24 X	0.90		37.4	-3.31 X	4.04 H	4	TD
ZRCTWK	46.3	0.27	1.08		46.3	0.42	0.67	4	LC
ZUWZW9	47.6	0.82	1.07		49.5	1.75	2.42	4	TB

Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated Board - EC13
TAPPI Official Test Method T839

Report #624 (K)
September 2021

Consensus (All Labs) Results

Month Mean	45.59	Grand Mean	45.28
Avg SD	1.67	Avg SD Months	1.43
SD btwn Labs	2.44	SD btwn Labs	2.38
Labs Incld	36	Labs Incld	36

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
TB	TMI Monitor/Compression Tester, Model 17-70	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
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 #624 (K)
September 2021

| | Weekly Means | | | | Monthly Results | | | | Cumulative Results | | | | | |
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
22AFY2	114.5	108.8	117.4	116.6	114.3	1.13	11.1	3.9	112.1	0.60	9.8	4.4	8	LJ
2CRTG7	116.3	118.8	* No Data	115.5	116.9	1.82	8.7	1.7	114.3	1.33	9.1	4.4	7	LC
2CRTG7_AL	115.4	108.4	113.2	111.2	112.0	0.51	9.3	3.0	111.6	0.44	9.4	3.7	8	AL
2D98PF_AL	108.6	105.2	113.6	108.0	108.8	-0.35	9.9	3.5	108.0	-0.77	8.6	7.8 H	8	AK
2KMTXJ	118.3	111.9	118.5	114.7	115.8	1.54	7.8	3.2	114.7	1.48	10.7	3.2	8	TB
3UNTT3	108.8	108.9 H	103.3	113.9	108.7	-0.39	11.0	4.4	108.3	-0.70	9.3	3.0	8	LB
48BA73	105.5	102.8	102.6	106.5 L	104.3	-1.58	4.8	1.9	104.1	-2.10 *	5.0	1.9	8	LA
4EBRNZ_AL	111.5	113.4	114.2	117.6 *	114.2	1.09	8.4	2.5	114.8	1.52	9.2	2.3	8	AL
4J4Q4F	116.2	114.6	110.8	121.3 XH	115.7	1.51	11.5	4.4	113.4	1.03	9.9	4.8	8	LA
4J6NB6	110.1	110.6	108.7	110.7	110.0	-0.03	6.2	0.9	110.1	-0.08	6.5	0.7 L	8	AH
4PU9CZ	110.3	111.8	113.8	117.2	113.3	0.85	10.1	3.0	112.7	0.78	9.5	2.4	8	LC
4XN6N3	116.2	115.6	117.2	114.7	115.9	1.56	6.3	1.0	115.2	1.65	6.0	1.0	8	LC
63E6UA	135.2 XL	136.0 X	133.6 X	133.5 X	134.6	6.62 X	4.5	1.2	132.0	7.29 X	5.5	3.0	8	AH
6E7QZ6	107.6 L	108.3	109.4 L	107.2	108.1	-0.55	3.9	1.0	107.4	-0.98	3.9	1.2	7	XX
6MHN6C	101.4	106.5	108.9	108.8	106.4	-1.02	9.3	3.5	107.5	-0.94	8.7	3.1	8	LA
72VHVR_AL	113.1	109.1	113.1	113.8	112.3	0.58	7.1	2.1	113.2	0.95	8.3	2.4	8	AL
7JCMFY	108.0	107.1	107.7	108.5	107.8	-0.63	7.2	0.6	108.3	-0.69	8.0	1.5	8	LZ
7QDYCV_AL	115.7	117.7	113.0	117.1	115.9	1.56	7.3	2.1	114.8	1.49	6.7	3.3	8	AL
8PGWBX_AL	108.1	107.7	108.5	107.9	108.1	-0.57	8.4	0.3 L	108.8	-0.53	8.9	2.1	8	AL
A74TPX	107.4	107.8	107.3	110.8	108.3	-0.49	5.4	1.6	108.2	-0.71	6.2	2.0	8	LA
AFQYFA	114.6	117.3	109.6	110.3	112.9	0.75	8.4	3.6	113.5	1.07	7.8	3.1	8	LA
AFQYFA_AL	112.9	109.5	113.2	110.9	111.6	0.40	7.3	1.7	112.9	0.86	7.2	1.9	8	AL
AVDEFZ	112.0	119.0 *	115.0	107.5	113.4	0.87	8.1	4.9	112.2	0.63	10.0	3.7	8	XX
AY2T4A	101.8 H	99.7 *	96.9 *	103.1 *	100.4	-2.65 *	9.5	2.7	100.4	-3.33 X	9.4	2.3	8	XX
BAAVZR	111.4	109.8	110.2	109.2	110.2	0.01	8.9	0.9	109.0	-0.45	9.5	2.3	8	LA
BXXTEU	98.3 *	101.2	96.6 *	93.1 X	97.3	-3.48 X	9.0	3.4	97.5	-4.32 X	8.6	2.9	8	LA
C9WNCP	116.1	109.2	108.3	112.2	111.4	0.35	8.0	3.5	109.9	-0.13	9.0	2.8	8	LA
CE3FJ2	104.9	105.1	105.2	109.2	106.1	-1.10	6.6	2.1	105.9	-1.49	7.2	3.2	8	LA
CH4HA4	126.0 X	129.8 X	118.1	114.0	122.0	3.20 X	9.8	7.2 H	124.3	4.68 X	9.4	6.2 H	8	AX
ECNPAN	104.5	101.7	102.6 H	110.7	104.9	-1.43	11.5	4.1	106.1	-1.44	11.7	3.2	8	AH
F7HH66	122.5 *	125.0 X	120.5 *	131.0 X	124.8	3.96 X	10.5	4.6	124.7	4.82 X	11.4	3.8	8	AC
FAX2BT	118.0	115.3	114.1	113.5	115.2	1.37	7.3	2.0	114.2	1.32	8.3	2.1	8	AH
G93KR6	114.2	112.0	119.8	110.4	114.1	1.07	6.4	4.1	114.1	1.27	6.4	4.1	4	AH
H2JNHN	113.9	109.9	109.6	113.1	111.6	0.39	8.6	2.2	109.7	-0.21	8.7	3.3	8	TP
HB6XUN	113.0	110.3	104.5	112.4	110.0	-0.03	8.8	3.9	109.6	-0.25	8.6	2.8	8	LZ

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

Report #624 (K)
September 2021

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
HPK8AY	106.3	110.8 H	108.7	105.9	107.9	-0.60	10.7	2.3	109.9	-0.15	9.2	3.2	8	LC
JKMQVJ	109.6	110.7	104.4	107.0	107.9	-0.60	7.5	2.8	107.9	-0.81	7.5	2.8	4	LC
JTHLXN	105.3 L	105.7 L	107.2 L	107.5 L	106.4	-1.01	2.8	1.1	107.6	-0.91	5.4	1.6	8	LA
JUQZZM_AL	112.9	110.2	110.9	111.4	111.3	0.32	9.7	1.1	111.0	0.22	8.6	1.0	8	AL
JZWPL2	110.6	110.5	108.6	110.4	110.0	-0.03	10.9	1.0	109.9	-0.15	9.5	1.5	8	LA
MQY6RC	103.8	104.2	105.0	109.2	105.6	-1.25	9.4	2.5	107.6	-0.92	9.2	3.7	8	AH
MQY6RC_AL	116.3	117.2	110.8	108.7	113.3	0.84	10.7	4.1	114.9	1.52	10.9	3.6	8	AL
MT7KYH	114.0	106.2	107.2	108.8	109.1	-0.30	6.4	3.5	109.1	-0.43	6.4	3.5	4	AX
MT7KYH_AL	109.1	110.3	113.0	106.2	109.7	-0.14	7.8	2.8	109.7	-0.23	7.8	2.8	4	AL
PJCUVM	114.0	113.6	110.2	111.2 H	112.2	0.56	11.3	1.9	110.4	0.04	10.4	3.3	8	LC
PJCUVM_AL	115.3 H	110.0	117.3	116.1	114.7	1.23	11.1	3.2	113.4	1.04	10.4	2.9	8	AL
PK7KYF	114.2	114.8 L	114.2	115.6 L	114.7	1.23	4.3	0.6	115.0	1.56	3.4	0.6 L	8	LC
PZHD7J	108.0	109.3	110.3	111.4	109.8	-0.11	6.6	1.4	110.5	0.05	6.8	1.9	8	TP
Q8XGTC_AL	110.6	106.2	106.0	No Data	107.6	-0.69	8.0	2.6	107.6	-0.92	8.0	2.6	3	AL
QEFR37_AL	107.7	106.4	109.2	109.5	108.2	-0.54	8.0	1.4	108.6	-0.57	7.4	2.3	8	AL
RPUX2F_AL	110.7	112.9	115.1	110.3	112.2	0.57	7.0	2.2	112.2	0.63	8.0	2.0	8	AL
T8RLMB_AL	118.3	110.4	116.9 L	111.0	114.2	1.08	5.9	4.0	114.7	1.47	7.1	2.8	8	AK
TET29C	111.3	111.3	111.3	111.3	111.3	0.31	5.8	0.0 L	111.3	0.34	5.5	0.1 L	8	LJ
UVCCCQ_AL	104.9	105.4	104.6	104.3	104.8	-1.45	6.2	0.5	105.3	-1.68	7.1	1.8	8	XX
VJTYUL	113.2	113.2	113.8	112.6 L	113.2	0.83	4.1	0.5	113.2	0.97	4.1	0.5 L	4	LA
WGZRKA_AI	107.7	112.2	106.7	No Data	108.9	-0.35	8.5	2.9	109.2	-0.39	8.7	3.2	7	AL
WVLZLG_AL	112.9	110.2	106.3	112.6	110.5	0.10	8.5	3.1	109.6	-0.23	9.0	3.5	8	AK
XKJYQN	105.8	99.5 *L	103.3	104.4	103.2	-1.87	7.5	2.7	104.7	-1.88	7.6	3.2	8	LC
XTBDPN	103.5	106.0	104.2	107.0	105.2	-1.35	6.6	1.6	104.7	-1.89	8.5	1.8	8	AH
XWVAA8	112.4	106.5	102.0	107.7	107.1	-0.82	9.4	4.3	108.2	-0.72	9.6	3.6	8	XX
YGFGA8	104.8	105.9	106.1	99.7 X	104.1	-1.63	8.2	3.0	110.3	0.00	8.2	7.6 H	8	TB
YNV9A6	106.8	112.0	106.0	114.8	109.9	-0.07	7.4	4.2	109.1	-0.41	8.2	3.0	8	AH
YP6EPE	106.2 H	107.3	106.6 H	107.8 H	107.0	-0.86	15.2	0.7	107.9	-0.83	13.7	1.2	8	XX
Z78FY7_AL	110.9	111.0	No Data	109.4	110.4	0.07	10.8	0.9	111.3	0.33	9.6	1.5	7	AL

Consensus (All Labs) Results

Wk Mean	110.61	109.58	109.69	110.69	Month Mean	110.15	Grand Mean	110.32	
Avg SDr	8.50	8.60	8.20	8.46	Avg SD	8.45	Avg SD	8.40	
SD btwn Labs	4.83	4.38	5.25	3.45	SD btwn Labs	3.69	SD btwn Labs	2.98	
Labs Incld	62	61	61	57	SD btwn Wks	2.69	SD btwn Wks	3.06	
Labs Excld	2	3	1	5	Labs Incld	60	Labs Incld	59	
Labs not Rcvd	0	0	2	2					

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

Report #624 (K)
September 2021

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)
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 #624 (K)
September 2021

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SD	SD Wks	Cumulative Results Mean	CPV	SD	SD Wks	Wks	Inst
22AFY2	112.3	117.0	116.3	114.9	115.1	-0.21	10.0	2.1	114.1	-0.51	10.4	4.7	12	LZ
2CRTG7	123.0	124.9	NO DATA	118.4	122.1	1.52	10.1	3.3	119.7	0.92	9.9	5.4	11	LC
2CRTG7_AL	112.3	112.9	111.4	125.4	115.5	-0.12	9.2	6.6	115.9	-0.03	9.7	5.6	12	XX
2D98PF_AL	115.0	114.3	115.5	114.2	114.7	-0.31	13.5	0.6	117.9	0.45	11.9	3.5	12	AK
2KMTXJ	117.6	125.6 *	117.5 L	121.1	120.4	1.10	10.2	3.8	119.4	0.84	10.5	2.8	12	TB
3UNTT3	118.1	115.9	120.9	117.9	118.2	0.55	9.3	2.1	116.8	0.18	9.7	2.2	8	LB
48BA73	116.8	112.3	119.1	113.8	115.5	-0.12	7.0	3.0	113.0	-0.79	5.4	3.5	12	LA
4EBRNZ_AL	116.7	115.8	125.2 *	118.2	119.0	0.74	7.6	4.3	118.9	0.70	9.0	3.5	12	AL
4J4Q4F	123.5	116.5	120.6	125.0	121.4	1.35	11.8	3.7	122.9	1.72	10.7	4.5	12	LA
4J6NB6	113.8	112.7	114.5	115.1	114.0	-0.48	7.7	1.0	113.7	-0.61	6.9	1.0	12	AH
4PU9CZ	116.5	123.2	121.7	115.4	119.2	0.79	9.2	3.8	117.9	0.47	10.7	3.8	12	LC
4XN6N3	116.5	120.8 L	118.1	116.3	117.9	0.48	7.3	2.1	117.9	0.47	6.9	2.3	12	LA
63E6UA	139.8 XL	139.0 XL	139.7 XL	139.2 X	139.4	5.80 X	3.8	0.4 L	135.9	5.03 X	5.3	4.8	8	AH
6E7QZ6	120.2	118.7 L	118.0 L	117.6 L	118.6	0.66	3.6	1.1	119.5	0.87	3.9	1.7	11	XX
6MHN6C	114.2	116.1	112.4	115.9	114.7	-0.32	10.1	1.7	114.3	-0.44	10.9	1.9	12	LA
72VHVR_AL	121.3	115.0	117.9	128.6 *	120.7	1.17	9.9	5.9	115.5	-0.15	10.6	5.4	12	XX
7JCMFY	117.0	112.1	109.3	113.5	113.0	-0.74	12.3	3.2	114.0	-0.53	11.1	3.3	12	LZ
7QDYCV_AL	112.2	114.5	130.7 XH	127.6 *	121.2	1.30	13.7	9.3 H	118.7	0.67	11.3	5.8	12	XX
8PGWBX_AL	115.3	117.5	116.0	117.1	116.5	0.12	8.1	1.0	120.3	1.06	10.5	6.5	12	AL
A74TPX	108.5	116.3	114.6	115.0	113.6	-0.59	8.1	3.5	115.2	-0.23	8.7	3.4	12	LA
AFQYFA	120.2	118.9	122.8	114.6	119.1	0.78	10.1	3.4	120.4	1.09	9.2	3.0	12	LA
AFQYFA_AL	123.6	114.5	120.9	116.6	118.9	0.72	8.3	4.1	118.5	0.62	7.5	3.8	12	XX
AVDEFZ	116.0	118.0	119.0	113.5	116.6	0.16	12.3	2.4	116.8	0.18	12.1	2.7	8	XX
AY2T4A	109.5	107.9	112.7	111.4	110.4	-1.38	9.6	2.1	108.6	-1.90	9.7	2.8	8	XX
BAAVZR	107.2	109.7	110.5	112.7	110.0	-1.48	11.3	2.3	113.2	-0.72	10.8	3.3	12	LA
BXXTEU	108.4	112.4	110.4	114.4	111.4	-1.13	10.2	2.6	109.7	-1.62	10.3	3.9	8	LC
C9WNCP	114.1	116.7	111.3	116.6	114.7	-0.32	11.5	2.5	114.6	-0.39	11.2	1.5	12	LA
CE3FJ2	107.7	113.8	110.0	108.4	110.0	-1.49	8.9	2.7	108.6	-1.89	9.5	3.2	12	LA
CH4HA4	132.5 X	115.0	113.7	117.8	119.8	0.93	10.5	8.7 H	125.1	2.28 *	12.1	8.3 H	12	XX
ECNPAN	114.0	107.8	114.5	107.9	111.1	-1.22	10.0	3.7	111.1	-1.27	10.7	2.2	12	AH
F7HH66	123.3	124.2	125.7 *	130.6 *	126.0	2.47 *	11.1	3.3	124.3	2.09 *	9.8	5.4	12	AC
FAX2BT	121.2	121.5	120.9	119.2	120.7	1.17	7.8	1.0	122.9	1.71	8.1	2.1	12	AH
G93KR6	122.6	121.0	125.2 *	116.8	121.4	1.34	7.6	3.5	120.0	0.99	6.6	4.3	12	AH
H2JNHN	115.1	117.4	119.4	115.8	116.9	0.23	10.0	1.9	114.7	-0.36	8.9	2.4	12	XX
HB6XUN	118.7	117.0	109.5	115.7	115.2	-0.19	13.1	4.0	114.7	-0.36	11.3	3.9	12	LZ

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

Report #624 (K)
September 2021

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
			Weekly Means			Monthly Results				Cumulative Results				
HPK8AY	119.5 H	126.3 *	122.4	119.8 H	122.0	1.49	13.7	3.1	119.8	0.95	11.5	3.4	8	XX
JKMQVJ	112.1	113.9	112.8	108.4	111.8	-1.03	9.5	2.4	112.3	-0.95	10.0	3.4	12	LA
JTHLXN	112.4	112.8	113.3	111.6	112.5	-0.85	5.7	0.7	110.8	-1.34	7.1	2.0	12	LA
JUQZZM_AL	113.7	113.8	112.0	112.9	113.1	-0.71	7.9	0.8	113.2	-0.72	8.4	1.5	12	AL
JZWPL2	115.0	113.5	114.7	120.5	115.9	-0.01	10.2	3.1	114.6	-0.37	11.2	3.1	12	LA
MQY6RC	116.2	114.2	105.0 *	112.2	111.9	-1.01	10.2	4.9	112.1	-1.02	10.5	4.8	11	AH
MQY6RC_AL	112.4	116.1	113.8	118.1	115.1	-0.22	11.4	2.5	114.5	-0.41	11.3	3.5	11	XX
MT7KYH	113.4	113.2	110.0	120.8	114.4	-0.40	7.0	4.6	114.0	-0.52	7.6	2.7	12	AH
MT7KYH_AL	111.1	120.8	117.1	117.7	116.7	0.17	8.7	4.1	117.1	0.25	7.9	3.5	12	AL
PJCUVM	119.7	112.9	112.3	117.2	115.5	-0.12	12.1	3.5	117.1	0.27	11.7	2.6	12	LC
PJCUVM_AL	117.9	116.6	119.6	116.3	117.6	0.40	11.6	1.5	117.8	0.43	12.1	2.5	12	AL
PZHD7J	115.7	116.0	114.0	113.7	114.9	-0.28	8.5	1.2	114.2	-0.48	7.9	1.4	12	TP
Q8XGTC_AL	114.9	113.4	108.7	No Data	112.3	-0.90	12.6	3.2	112.5	-0.90	12.1	2.7	11	AL
QEFR37_AL	115.5	116.6	114.4	111.3	114.4	-0.38	8.8	2.3	115.1	-0.25	8.1	2.9	12	AL
RPUX2F_AL	117.7	113.9	114.5	118.3	116.1	0.03	8.6	2.2	117.4	0.32	8.6	3.0	12	AL
T8RLMB_AL	122.3	125.5 *	120.8	127.9 *	124.1	2.02 *	8.5	3.2	121.9	1.48	8.4	3.7	12	AL
TET29C	114.2 L	114.8	114.4	114.4	114.5	-0.38	6.1	0.3 L	113.9	-0.54	6.4	0.5 L	12	LJ
UVCCCQ_AL	113.3	108.1	109.3	111.2	110.5	-1.36	8.0	2.3	111.5	-1.15	7.2	2.3	12	XX
VJTYUL	117.2 L	116.6 L	116.5	116.3 L	116.7	0.17	4.1	0.4 L	115.9	-0.04	4.0	0.7 L	12	LA
WGZRKA_AI	113.8	119.6	117.0	No Data	116.8	0.21	12.4	2.9	117.3	0.32	10.4	2.9	11	AL
WVLZLG_AL	117.2	122.0	116.6	127.7 *	120.9	1.22	8.7	5.2	122.4	1.60	10.6	4.5	12	AK
XKJYQN	105.8 *	101.6 X	110.7	110.8	107.3	-2.16 *	9.2	4.4	110.3	-1.47	9.8	5.0	12	LC
XTBDPN	105.5 *	103.5 *	109.9	108.3	106.8	-2.27 *	9.4	2.9	107.7	-2.12 *	9.9	2.6	12	AH
XWVAA8	117.1	114.5	117.2	119.2	117.0	0.25	10.0	2.0	117.1	0.27	9.4	2.3	8	XX
YGFGA8	113.8	109.1	109.8	108.1	110.2	-1.42	8.7	2.5	120.2	1.04	10.6	8.0 H	12	TB
YNV9A6	123.2	121.2	112.2	114.6	117.8	0.45	8.5	5.2	117.5	0.37	10.2	3.8	12	AH
YP6EPE	113.4	108.5	110.5	113.0	111.4	-1.14	12.4	2.3	111.2	-1.24	11.8	2.1	12	XX
Z78FY7_AL	119.8	124.3	119.3	112.5	119.0	0.74	11.0	4.9	119.1	0.75	10.9	5.1	12	AL

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Cumulative
Wk Mean	115.67	116.06	115.40	116.43	Month Mean	115.97	Grand Mean	116.08
Avg SDr	9.80	9.34	9.90	9.70	Avg SD	9.82	Avg SD	9.74
SD btwn Labs	4.45	4.82	4.66	5.20	SD btwn Labs	4.05	SD btwn Labs	3.95
Labs Incld	61	61	60	60	SD btwn Wks	3.50	SD btwn Wks	3.72
Labs Excld	2	2	2	1	Labs Incld	62	Labs Incld	62
Labs not Rcvd	0	0	1	2				

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

Report #624 (K)
September 2021

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

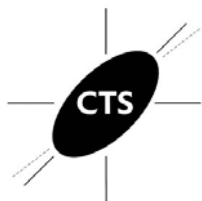Containerboard Interlaboratory Testing Program
Analysis 215
Ring Crush, 42 lb Linerboard - 42F4
TAPPI Official Test Method T822

Report #624 (K)
September 2021

| | Weekly Means | | | | Monthly Results | | | | Cumulative Results | | | | | |
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2CRTG7	87.7	87.8	86.7	89.0	87.8	-1.31	3.2	0.9	87.2	-1.48	3.0	2.2	8	LD
2D98PF	91.5	89.3	91.0	92.1	91.0	-0.27	2.6	1.2	91.1	-0.08	3.1	1.4	8	LD
2KMTXJ	86.1	86.7	95.1	94.3	90.6	-0.41	4.6	4.8	91.2	-0.06	4.3	3.8	8	LD
3UNTT3	92.1	95.6	95.4	93.9	94.2	0.81	2.1	1.6	92.9	0.58	2.4	1.9	8	LC
48BA73	90.8	90.8	90.6	91.6 L	90.9	-0.28	2.0	0.5 L	92.1	0.25	1.9	1.4	8	LZ
4J4Q4F	95.6	95.5	96.7	93.5	95.3	1.17	3.6	1.4	93.6	0.80	4.1	2.2	8	LZ
4PU9CZ	95.3	98.9	96.9	95.8	96.7	1.62	1.8	1.6	94.1	0.98	3.9	3.3	8	LD
4XN6N3	90.5	93.8	89.9	90.3	91.1	-0.22	2.6	1.8	90.9	-0.16	3.0	1.5	8	LC
63E6UA	93.3	93.7	91.3	91.6	92.5	0.22	3.5	1.2	91.3	-0.02	3.8	1.6	8	LD
6E7QZ6	84.0	74.2 X	77.7 XH	82.1 *	79.5	-4.03 X	3.8	4.4	79.1	-4.37 X 4.3		3.2	7	LD
6MHN6C	91.2	92.8	91.7	91.8	91.9	0.02	2.7	0.7	90.8	-0.18	2.8	1.3	8	LD
72VHVR	89.1	89.6	92.0	92.9	90.9	-0.28	3.6	1.8	89.8	-0.54	3.5	1.7	8	LD
7JCMFY	89.4	91.1	91.5	91.4	90.8	-0.31	2.6	1.0	90.7	-0.22	2.6	1.0	8	LD
7QDYCV	97.3	96.7	70.1 XH	98.0	90.5	-0.41	5.3	13.6 H	80.9	-3.73 X 6.6		14.7 H	8	LC
8PGWBX	85.1	85.3	85.9 *	87.1	85.9	-1.95 *	4.2	0.9	88.8	-0.92	5.9	3.3	8	LC
A74TPX	88.8	88.4	88.9	90.4	89.1	-0.87	2.2	0.9	88.9	-0.87	2.2	0.8 L	8	LD
AFQYFA	88.8	89.4	89.9	91.4	89.9	-0.63	3.2	1.1	90.2	-0.40	3.0	0.9 L	8	LD
AV2H9B	88.1 L	87.6 L	88.8	87.7	88.0	-1.23	1.4	0.6	88.9	-0.87	1.5	1.1	8	RS
AY2T4A	93.8	97.1	96.5	95.4	95.7	1.28	2.8	1.4	92.4	0.36	3.0	3.8	8	LZ
BAAVZR	91.6	93.0	94.4	96.4	93.8	0.67	3.8	2.0	91.8	0.15	4.9	3.9	8	LD
BXXTEU	83.1 H	83.2 *H	86.2 H	73.5 XH	81.5	-3.38 X	9.6	5.6	88.5	-1.01	7.1	8.4 H	8	LB
BYVYZU	93.5	93.4	92.6 L	93.5 L	93.3	0.48	1.6	0.5 L	92.7	0.48	1.7	0.7 L	8	MB
CH4HA4	85.8	84.3	90.3	86.1	86.6	-1.70	3.9	2.6	86.3	-1.79	3.9	2.4	8	LD
E8JQ36	87.3	88.9	89.7	88.5 L	88.6	-1.05	2.7	1.0	89.3	-0.75	2.6	1.1	8	EN
ECNPAN	95.0	94.1	96.0	92.7	94.4	0.87	2.8	1.4	94.1	0.99	3.0	1.6	8	LC
FAX2BT	90.2	93.7	93.6	93.2	92.7	0.29	2.6	1.7	91.8	0.17	2.5	1.8	8	LG
H2JNHN	98.8	96.3	97.1	98.9	97.8	1.96 *	3.0	1.3	96.4	1.81	2.8	1.8	8	LD
HB6XUN	87.6	88.6	87.1	82.5 *	86.4	-1.76	2.6	2.7	87.1	-1.52	2.6	2.5	8	LC
HPK8AY	95.2	88.6	93.2	95.3	93.1	0.43	2.2	3.1	92.2	0.29	2.8	2.6	8	MB
JKMQVJ	92.8	92.9	94.2	94.8	93.7	0.62	2.7	1.0	93.7	0.83	2.7	1.0	4	LD
JTHLXN	93.0 L	93.4	93.0 L	92.9 L	93.0	0.41	1.4	0.2 L	94.5	1.13	1.8	1.8	8	TU
N2WC9G	96.0	90.1	95.8	98.0	95.0	1.05	3.1	3.4	91.6	0.08	5.4	10.0 H	8	TU
N83WBT	86.6	86.3	88.3	89.5	87.7	-1.36	2.1	1.5	87.1	-1.53	2.1	1.4	8	EM
P82J3Q	84.2	89.1	90.4	90.7	88.6	-1.05	3.4	3.0	87.8	-1.26	3.4	2.4	8	TH
PHZE2L	90.5	91.7	94.0	89.8 H	91.5	-0.10	5.0	1.8	89.7	-0.58	4.6	3.4	8	TH

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

Report #624 (K)
September 2021

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
PJCUVM	93.8	91.8	93.4	96.0	93.7	0.64	3.8	1.7	87.1	-1.51	5.0	10.8 H	8	LD
PZ3ULL	83.6	84.2	85.7 *	84.5	84.5	-2.40 *	2.8	0.9	87.4	-1.42	2.6	3.2	8	LC
PZHD7J	89.9	90.5	91.0	92.5	91.0	-0.26	3.5	1.1	91.3	-0.03	4.2	1.3	8	TJ
Q8XGTC	92.3	93.5	92.6	93.3	92.9	0.37	2.7	0.5	92.3	0.33	2.8	1.2	8	LD
QEFR37	97.5	91.0	95.3 H	89.4	93.3	0.49	4.4	3.7	91.9	0.19	5.0	3.3	8	LZ
T8RLMB	87.8	91.6	91.4	89.9	90.1	-0.54	2.3	1.8	90.4	-0.35	2.3	2.3	8	LD
TET29C	91.5	91.3	91.3	91.1	91.3	-0.16	2.8	0.1 L	91.3	-0.02	2.7	0.2 L	8	LD
THMWQC	100.2 *	101.4 *	104.5 X	101.6 *	101.9	3.33 X	3.5	1.8	97.9	2.36 *	3.8	4.6	8	EX
VJTYUL	93.6	93.7	94.1	93.9	93.8	0.67	2.4	0.2 L	93.8	0.89	2.4	0.2 L	4	LD
VUUJWE	98.6	100.1 *	98.5 *	84.7 H	95.5	1.21	6.0	7.2 H	95.5	1.48	6.0	7.2 H	4	MB
VYMLZE	76.4 X	77.7 X	78.0 X	77.7 X	77.4	-4.71 X	3.7	0.7	77.2	-5.08 X	3.0	1.1	8	EM
X98UEL	94.4	92.3	90.8	93.8	92.8	0.34	2.8	1.6	92.0	0.25	3.1	1.4	8	LD
XJNJC7	94.4	94.1	94.1	94.7	94.3	0.84	3.2	0.3 L	95.5	1.48	3.0	1.8	8	TH
XKJYQN	89.2	97.4	94.3	95.8	94.2	0.79	3.8	3.6	93.2	0.68	3.7	2.9	8	LD
XTBDPN	89.6	89.6	91.8	92.0	90.8	-0.34	2.7	1.3	89.3	-0.75	2.6	2.0	8	LD
YGFGA8	100.3 *	96.7	98.5 *	98.4	98.4	2.19 *	2.5	1.5	98.5	2.57 *	2.9	2.3	8	LX
YQZ244	91.0	94.1	91.7	91.0	91.9	0.04	2.9	1.5	91.5	0.04	2.9	1.7	8	LD
Z78FY7	88.3	91.3	90.9	89.2	89.9	-0.61	3.1	1.4	88.9	-0.87	2.8	1.6	8	LC

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Cumulative
Wk Mean	91.26	91.81	92.24	92.05	Month Mean	91.79	Grand Mean	91.34
Avg SDr	3.27	3.18	3.33	3.38	Avg SD	3.18	Avg SD	3.51
SD btwn Labs	4.29	4.01	3.22	4.04	SD btwn Labs	3.05	SD btwn Labs	2.79
Labs Incld	52	51	49	51	SD btwn Wks	2.84	SD btwn Wks	3.37
Labs Excld	1	2	4	2	Labs Incld	49	Labs Incld	50
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	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)

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

Report #624 (K)
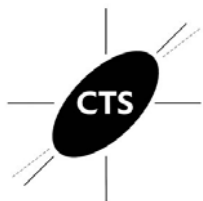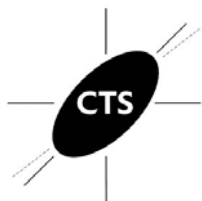**September 2021**

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
		Weekly Means				Monthly Results				Cumulative Results				
2CRTG7	127.3 L	132.9	127.5	131.6	129.8	-1.21	3.0	2.9	129.5	-1.56	3.5	3.9	12	LD
2D98PF	131.0	135.8	131.7	130.2	132.2	-0.71	3.7	2.5	132.5	-0.80	4.2	1.6	12	LD
2KMTXJ	133.4	134.2	143.1	141.5	138.1	0.55	5.0	5.0	140.4	1.20	5.5	5.3	12	LD
3UNTT3	134.8	138.9	142.5	139.0	138.8	0.71	3.2	3.2	139.3	0.91	3.4	2.3	8	LC
48BA73	137.4	137.9	136.8	135.7	137.0	0.32	2.7	0.9	136.4	0.17	2.7	1.0 L	12	LZ
4J4Q4F	135.4	136.3	132.3	136.4	135.1	-0.08	4.2	1.9	134.1	-0.40	4.1	3.1	12	LZ
4PU9CZ	135.0	141.0	138.7	141.2	139.0	0.75	4.0	2.9	136.4	0.20	4.2	3.1	12	LD
4XN6N3	136.5	136.9	133.0	133.5	135.0	-0.11	3.7	2.0	134.7	-0.25	3.7	2.6	12	LC
63E6UA	131.0	129.5	129.0	130.2	129.9	-1.19	5.4	0.9	131.7	-1.00	5.8	2.9	8	LD
6E7QZ6	119.6 *H	110.0 XH	113.7 X	126.5	117.5	-3.86 X	6.5	7.2	117.9	-4.49 X	7.2	7.3	11	LD
6MHN6C	135.0	133.7	131.6	134.9	133.8	-0.36	4.0	1.6	132.8	-0.73	4.0	2.2	12	LD
72VHVR	136.8	136.5	136.2	136.5	136.5	0.22	4.2	0.2 L	135.0	-0.16	3.7	2.1	12	LD
7JCMFY	137.3	137.4	135.7	135.2	136.4	0.20	3.1	1.1	135.2	-0.10	3.7	1.9	12	LD
7QDYCV	134.8	130.6	95.4 XH	140.0	125.2	-2.20 *	5.7	20.2 H	111.2	-6.19 X	7.2	22.7 H	12	LC
8PGWBX	143.5	142.6	143.5	142.9	143.1	1.64	4.3	0.4 L	134.2	-0.38	7.3	12.9 H	12	LC
A74TPX	133.7	130.5	133.9	131.7	132.5	-0.65	3.2	1.6	133.5	-0.55	3.1	2.0	12	LD
AFQYFA	132.4	127.7	134.8	132.8	131.9	-0.76	4.7	3.0	132.8	-0.72	4.5	2.4	12	LD
AV2H9B	134.5 L	133.0 L	133.3 L	133.1 L	133.5	-0.43	1.2	0.7 L	135.7	0.01	1.5	1.8	12	RS
AY2T4A	145.1	144.8	145.5	142.1	144.4	1.91	4.2	1.5	140.9	1.33	4.6	3.5	12	LZ
BAAVZR	137.2	140.8	140.6	141.1	139.9	0.95	3.9	1.8	139.8	1.04	4.1	4.7	12	LD
BXXTEU	136.3	135.2 H	128.4 H	122.3 *H	130.5	-1.05	10.0	6.5	130.5	-1.29	10.0	6.5	4	LB
BYVYZU	139.7 L	139.0 L	139.3 L	139.8 L	139.4	0.85	1.7	0.4 L	139.5	0.96	1.6	0.3 L	12	MB
CH4HA4	131.5	130.5 H	137.0	138.9	134.5	-0.22	6.3	4.1	133.5	-0.54	6.6	3.1	12	LD
E8JQ36	126.2	131.3	131.4	128.1	129.3	-1.33	4.2	2.5	130.3	-1.34	3.9	3.0	12	EN
ECNPAN	143.7	137.8	139.3	139.8	140.2	1.00	4.0	2.5	139.3	0.91	3.6	1.9	12	LC
FAX2BT	134.6	137.0	136.3	135.6	135.9	0.09	2.9	1.0	136.1	0.11	3.0	2.1	12	LY
H2JNHN	136.4	140.0	135.1	137.8	137.3	0.40	4.0	2.1	137.5	0.46	4.1	2.3	12	XX
HB6XUN	126.5	126.8	125.6 *	120.0 X	124.7	-2.30 *	3.2	3.2	126.7	-2.26 *	3.6	3.5	12	LC
HPK8AY	145.1	138.8	140.6	136.3	140.2	1.02	4.5	3.7	138.6	0.73	4.8	3.1	12	MB
JKMQVJ	136.7	136.4	135.6 L	134.8	135.9	0.08	3.3	0.8	135.0	-0.16	3.4	1.2	12	LD
JTHLXN	144.3	144.3 L	144.0 L	144.3	144.2	1.87	2.2	0.2 L	138.3	0.66	4.5	5.3	12	TU
N2WC9G	139.1	138.5	139.1	141.1	139.5	0.86	5.2	1.1	137.0	0.34	10.3	5.7	12	TU
N83WBT	129.6	129.8 L	133.2	133.3 L	131.5	-0.85	2.1	2.1	130.6	-1.27	2.4	1.9	12	EM
P82J3Q	133.4	128.6	130.6	130.9	130.9	-0.98	4.3	2.0	131.1	-1.16	4.5	3.5	12	TH
PHZE2L	133.6	132.2	133.1 H	126.5 H	131.4	-0.88	7.4	3.3	138.4	0.70	5.8	6.9	12	TH

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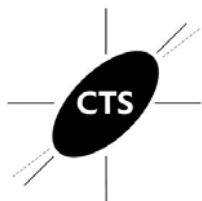TAPPI Official Test Method T822

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SD	SD Wks	Cumulative Results Mean	CPV	SD	SD Wks	Wks	Inst
PJCUVM	138.7	140.6	137.3	135.2	138.0	0.54	4.8	2.3	135.7	0.00	4.6	2.4	12	LD
PZ3ULL	129.6	129.7	129.2	129.5	129.5	-1.28	3.1	0.2 L	130.8	-1.22	3.4	1.3	12	LC
PZHD7J	133.1	137.1	135.4	138.1	135.9	0.10	5.5	2.2	135.9	0.06	5.7	1.5	12	TJ
Q8XGTC	134.4	136.0	134.3	135.0	134.9	-0.12	3.7	0.8	137.0	0.33	4.1	2.0	12	LD
QEFR37	140.0	133.0 H	135.9	133.1	135.5	0.00	5.8	3.3	137.6	0.50	5.3	3.3	12	LZ
T8RLMB	126.1	130.7	129.7	131.4	129.5	-1.28	3.1	2.4	132.4	-0.82	3.0	2.7	12	LD
TET29C	137.3	137.3	137.3	137.5	137.3	0.40	3.1	0.1 L	137.9	0.55	3.3	0.5 L	12	LD
THMWQC	151.4 *	149.3 *	149.1 *	153.8 X	150.9	3.30 X	3.7	2.2	145.9	2.58 *	4.0	4.1	12	EX
VJTYUL	136.1	136.4	137.0	136.0	136.4	0.19	2.8	0.4 L	136.5	0.22	2.9	0.6 L	12	LD
VUUJWE	146.4	144.9	148.0 *	118.8 XH	139.5	0.87	9.7	13.9 H	140.0	1.09	7.6	8.3 H	11	MB
VYMLZE	118.9 *H	118.7 X	116.4 X	114.7 X	117.2	-3.91 X	5.1	2.0	115.8	-5.01 X	4.5	2.0	12	EM
X98UEL	138.1	136.4	132.9	133.4	135.2	-0.06	3.7	2.5	134.8	-0.22	4.0	1.7	12	LD
XJNJC7	140.5	138.6	140.5	138.4	139.5	0.87	3.5	1.2	137.2	0.38	4.0	4.6	12	TH
XKJYQN	129.8	146.3 *	138.8 H	141.6	139.1	0.78	6.0	6.9	141.1	1.38	5.4	5.0	12	LD
XTBDPN	129.1	128.2	132.7	128.8	129.7	-1.23	3.4	2.0	128.9	-1.70	3.7	1.6	12	LD
YGFGA8	147.7	142.9	150.2 *	143.2	146.0	2.25 *	4.4	3.6	145.8	2.56 *	4.1	3.9	12	LY
YQZ244	129.2	137.4	130.6	136.5	133.4	-0.43	4.1	4.1	133.7	-0.48	4.4	3.2	12	LD
Z78FY7	135.5	137.9	138.9	134.6	136.7	0.27	4.1	2.0	134.6	-0.28	4.0	2.9	12	LC

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4				
Wk Mean	135.29	136.27	136.32	135.47	Month Mean	135.47	Grand Mean	135.66
Avg SDr	4.04	4.20	4.42	4.60	Avg SD	4.50	Avg SD	4.69
SD btwn Labs	6.43	5.14	5.55	4.88	SD btwn Labs	4.67	SD btwn Labs	3.96
Labs Incld	53	51	50	49	SD btwn Wks	4.32	SD btwn Wks	3.84
Labs Excld	0	2	3	4	Labs Incld	50	Labs Incld	50
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
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

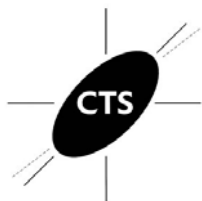Containerboard Interlaboratory Testing Program
Analysis 223
STFI, 42 lb Linerboard - 42F4
TAPPI Official Test Method T826

Report #624 (K)
September 2021

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
		Weekly Means				**Monthly Results**				**Cumulative Results**				
22AFY2	26.0 *	26.2	26.3	26.3 H	26.2	2.13 *	2.2	0.1	26.4	2.53 * 2.3		0.8	8	LH
2CRTG7	17.1 X	16.8 X	17.7 X	18.5 XH	17.5	-5.77 X	2.1	0.7	17.4	-5.98 X 2.0		1.9 H	8	LZ
2CRTG7_AL	35.8 XL	33.7 XL	40.4 XL	40.4 XL	37.6	12.54 X	0.0	3.4 H	37.4	12.95 X 0.0		2.3 H	8	AL
2D98PF_AL	24.3	23.1	23.8	23.7	23.7	-0.12	1.6	0.5	23.7	-0.04 1.5		0.4	8	AK
2KMTXJ	23.2	23.1	24.3	24.1	23.7	-0.14	1.8	0.6	23.8	0.13 2.0		0.4	8	LW
3UNTT3	22.7	24.5	23.0	23.4	23.4	-0.42	1.7	0.8	23.1	-0.61 1.6		0.7	8	LW
4EBRNZ_AL	25.0	25.1	24.9	25.0	25.0	1.05	1.7	0.1 L	24.2	0.50 1.6		0.8	8	AL
4J4Q4F	21.9	22.7	21.8	22.3	22.2	-1.51	1.9	0.4	22.1	-1.52 1.9		0.6	8	LU
4J6NB6	23.8	24.2	23.9	24.2	24.0	0.16	1.4	0.2	23.9	0.19 1.3		0.2	8	TT
4NZCTX	23.8	23.3	24.5	22.7	23.6	-0.27	1.3	0.8	23.8	0.07 1.6		0.8	8	XX
4PU9CZ	22.8	24.9	24.2	24.3	24.0	0.18	1.8	0.9	23.7	-0.01 1.8		0.8	8	LA
4XN6N3	24.8 L	25.5	25.2 L	25.6	25.3	1.31	1.3	0.4	25.2	1.42 1.4		0.3	8	LA
63E6UA	37.8 X	35.9 XH	36.5 XH	35.3 XH	36.4	11.45 X	2.7	1.1	36.5	12.17 X 2.3		0.8	8	XX
6MHN6C	23.2	22.8	23.0	22.3	22.8	-0.93	1.7	0.4	22.8	-0.87 1.7		0.3	8	LZ
72VHVR_AL	22.9	23.6	24.5	23.5	23.6	-0.19	2.0	0.7	23.5	-0.21 1.9		0.6	8	AL
7JCMFY	23.6	23.5	22.6	23.2	23.2	-0.57	1.5	0.4	23.4	-0.26 1.6		0.4	8	LY
7QDYCV_AL	24.4	25.2	23.6	21.9	23.8	-0.06	2.0	1.4	23.5	-0.20 1.6		1.4	8	AL
8PGWBX_AL	25.2	25.6	27.4 *H	26.4 *	26.2	2.11 *	2.3	1.0	25.5	1.67 1.9		1.0	8	AL
A74TPX	24.2	23.7	22.7	23.3	23.5	-0.33	1.2	0.6	23.3	-0.38 1.1		0.5	8	LH
AFQYFA_AL	24.3	22.5	23.7	23.6	23.5	-0.30	1.4	0.8	23.3	-0.36 1.7		0.8	8	AL
AY2T4A	23.8	26.0	25.1	26.3	25.3	1.36	2.0	1.1	24.4	0.69 1.9		1.4	8	LA
BXXTEU	44.5 XL	42.4 XL	44.8 XL	43.2 XL	43.7	18.19 X	0.0	1.1	43.9	19.13 X 0.0		0.8	8	LH
C9WNCP	23.4	23.3	23.4	23.5	23.4	-0.40	1.4	0.1 L	23.5	-0.15 1.3		0.3	8	LY
CE3FJ2	23.1	23.1	22.9	26.2	23.8	-0.02	2.0	1.6 H	24.1	0.37 2.0		1.4	8	LH
CH4HA4	22.8 L	24.9 L	23.7 L	23.5 L	23.7	-0.10	0.8	0.9	23.9	0.21 0.9		0.6	8	LH
E8JQ36	21.8	22.3	22.4	22.0	22.1	-1.58	1.8	0.3	22.0	-1.63 1.7		0.6	8	LY
E8TXY7	22.4	21.8	22.1	22.3	22.2	-1.54	1.6	0.3	21.8	-1.78 1.6		0.7	8	TT
ECNPAN	23.0	23.1 L	22.4	23.2	22.9	-0.83	1.4	0.4	22.8	-0.84 1.6		0.4	8	LU
F7HH66	22.0	22.9	22.3	22.6	22.5	-1.27	1.9	0.4	22.6	-1.08 1.8		0.3	8	LH
FAX2BT	22.3	23.6	23.7	22.8	23.1	-0.68	1.7	0.7	22.9	-0.79 1.6		0.5	8	LU
G93KR6	25.9	25.2	26.4	26.3 H	25.9	1.92	2.0	0.6	25.9	2.12 * 2.0		0.6	4	LU
HB6XUN	24.0	24.5	24.5	23.3	24.1	0.21	1.7	0.5	24.3	0.53 1.8		1.1	8	LY
HPK8AY	25.1 H	24.2	25.5	22.4 L	24.3	0.42	2.0	1.3	23.6	-0.06 1.7		1.3	8	LA
JKMQVJ	23.1	22.7	22.7	23.7	23.1	-0.71	1.7	0.5	23.1	-0.61 1.7		0.5	4	LA
JUQZZM	23.4	24.3	No Data	22.7	23.5	-0.32	1.5	0.8	23.7	-0.04 2.0		0.8	7	LU

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

Report #624 (K)
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WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SD	SD Wks	Cumulative Results Mean	CPV	SD	SD Wks	Wks	Inst
LJKZHZ	26.4 *	26.9 *	26.1	26.7 *	26.5	2.44 *	1.6	0.3	25.8	2.02 *	1.7	1.0	8	LH
MQY6RC	23.9	23.2	22.5	23.1	23.2	-0.61	1.6	0.6	22.8	-0.81	1.6	0.6	8	LH
MQY6RC_AL	23.6	23.5	22.9	23.0	23.3	-0.54	1.6	0.4	23.2	-0.44	1.6	0.6	8	AL
MT7KYH	24.6	24.9	25.7	25.3	25.1	1.17	1.8	0.5	25.1	1.35	1.8	0.5	4	LU
MT7KYH_AL	22.8 L	24.6	22.6	24.6	23.6	-0.19	1.3	1.1	23.6	-0.06	1.3	1.1	4	AL
N2WC9G	24.7	25.1	24.9	21.6	24.1	0.22	1.5	1.6 H	23.9	0.20	1.7	1.5	8	LA
P82J3Q	21.4 *L	20.1 XL	21.5 L	21.8 L	21.2	-2.41 *	0.5	0.8	21.4	-2.17 *	1.5	0.8	8	LZ
PHZE2L	40.2 XH	43.0 XH	43.0 X	41.2 X	41.8	16.45 X	2.6	1.4	41.2	16.60 X	2.9	1.3	8	TT
PJCUVM	23.3	23.0	23.5	22.8	23.1	-0.64	1.8	0.3	23.1	-0.56	1.6	0.3	8	LA
PJCUVM_AL	23.4	23.7	23.7	23.0	23.5	-0.36	1.7	0.3	23.2	-0.46	1.6	0.4	8	AL
PK7KYF	25.6	24.2	26.4	24.6	25.2	1.26	1.7	1.0	25.2	1.42	1.9	0.7	8	LA
PZHD7J	23.3	23.2	23.7	24.0	23.5	-0.27	1.4	0.3	23.6	-0.13	1.3	0.4	8	TT
Q6MGRB	23.4	23.7	23.8	22.8	23.4	-0.39	1.5	0.5	23.4	-0.27	1.5	0.5	4	LW
Q8XGTC_AL	25.1	24.3	24.8	24.6	24.7	0.79	1.8	0.3	24.7	0.95	1.8	0.3	4	AL
QEFR37_AL	23.8	24.0	22.3	21.9	23.0	-0.77	1.5	1.1	23.0	-0.64	1.5	0.9	8	AL
RPUX2F_AL	24.0	23.9	24.3	23.2	23.8	-0.01	1.8	0.4	23.5	-0.15	1.8	0.6	8	AL
T8RLMB_AL	23.1	22.1	23.2	23.5	23.0	-0.79	1.4	0.6	23.0	-0.70	1.5	0.6	8	AK
THMWQC	29.1 XL	30.1 XL	32.6 XL	33.9 XL	31.4	6.93 X	0.0	2.2 H	30.9	6.79 X	0.0	2.2 H	8	TT
UVCCCQ_AL	25.9	26.2 *L	25.4	25.4 L	25.7	1.72	1.5	0.4	25.3	1.54	1.8	0.9	8	XX
VJTYUL	23.9	24.0	23.7	23.8	23.9	0.01	2.0	0.1 L	23.9	0.15	2.0	0.1 L	4	LA
VUUJWE	23.4	25.4	25.2	23.9	24.5	0.59	2.0	1.0	24.5	0.74	2.0	1.0	4	LA
WVLZLG_AL	25.2	25.4	23.7	25.0	24.8	0.89	2.0	0.7	24.7	0.96	2.1	0.6	8	AK
XKGAGK	22.6	23.0	23.6	23.6	23.2	-0.55	1.6	0.5	23.3	-0.40	1.6	0.4	8	LU
XKJYQN	23.9 H	23.2 H	24.0	23.9	23.7	-0.11	3.2	0.4	24.1	0.40	2.6	0.7	8	LA
XTBDPN	22.6	22.7	23.1	23.3	22.9	-0.86	1.7	0.3	22.6	-1.03	1.7	0.4	8	LU
YQZ244	18.9 X	18.9 X	18.8 X	18.7 X	18.8	-4.58 X	1.8	0.1 L	21.8	-1.83	1.9	3.2 H	8	LH
Z78FY7	25.0	23.6	NO DATA	25.7 H	24.8	0.86	1.9	1.1	24.7	0.94	1.9	1.5	7	LU

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4				Grand	
Wk Mean	23.76	23.98	23.91	23.78	Month Mean		23.84	Grand Mean	23.70
Avg SDr	1.79	1.78	1.69	1.65	Avg SD		1.72	Avg SD	1.72
SD btwn Labs	1.13	1.15	1.31	1.33	SD btwn Labs		1.09	SD btwn Labs	1.05
Labs Incld	55	54	53	55	SD btwn Wks		0.72	SD btwn Wks	0.87
Labs Excld	7	8	7	7	Labs Incld		55	Labs Incld	56
Labs not Rcvd	0	0	2	0					

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

Report #624 (K)
September 2021

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	**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 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 224
STFI, 56 lb Linerboard - 56G2
TAPPI Official Test Method T826

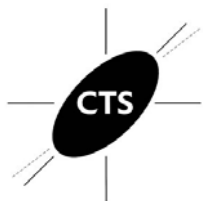| | Weekly Means | | | | Monthly Results | | | | Cumulative Results | | | | | |
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
22AFY2	38.1 H	38.9 *H	39.4 X	39.1 *	38.9	2.51 *	3.3	0.6	38.6	2.39 *	3.1	0.8	12	LZ
2CRTG7	28.4 X	24.9 X	26.1 X	28.0 X	26.8	-4.67 X	2.5	1.6	26.0	-5.11 X	2.4	2.0	12	LZ
2CRTG7_AL	41.6 XL	42.3 XL	42.3 XL	42.7 XL	42.2	4.51 X	0.0	0.5	41.6	4.17 X	0.0	1.1	12	XX
2D98PF_AL	34.3	34.3	34.0	34.3	34.2	-0.28	2.5	0.2 L	33.8	-0.46	2.2	1.0	12	AK
2KMTXJ	34.3	33.4 H	34.6	34.9	34.3	-0.22	2.8	0.6	34.7	0.08	2.7	1.4	12	LW
3UNTT3	33.8	34.5	33.7	33.8	34.0	-0.42	2.2	0.4	33.6	-0.56	2.0	0.4	8	ID
4EBRNZ_AL	36.6	36.1	34.5	36.2	35.9	0.71	2.6	0.9	34.8	0.14	2.6	1.1	12	AL
4J4Q4F	32.5	32.4	31.8 *	33.0	32.4	-1.33	2.2	0.5	32.4	-1.29	2.5	0.6	12	LW
4J6NB6	34.9	34.8	34.5	34.6	34.7	0.03	1.6	0.2	35.1	0.30	1.5	0.4	12	TT
4NZCTX	33.2	32.7	33.5	32.7	33.0	-0.97	2.7	0.4	34.3	-0.19	2.6	1.2	12	XX
4PU9CZ	34.5	35.6	35.6	35.8	35.4	0.43	2.4	0.6	34.7	0.09	2.4	1.1	12	LU
4XN6N3	35.7	37.3	35.4	36.4 H	36.2	0.92	2.8	0.8	36.0	0.83	2.2	0.9	12	LA
63E6UA	42.6 X	41.7 X	42.4 X	41.3 X	42.0	4.38 X	2.2	0.6	42.0	4.37 X	3.2	0.9	8	XX
6MHN6C	33.2	32.1	33.7	32.7	32.9	-1.03	2.0	0.7	33.4	-0.69	2.2	0.7	12	LZ
72VHVR_AL	34.4 L	35.9	34.5	35.2	35.0	0.18	2.0	0.7	35.6	0.59	2.1	1.2	12	XX
7JCMFY	33.2	33.9	34.5	33.6	33.8	-0.53	2.2	0.6	33.6	-0.56	2.2	0.6	12	LZ
7QDYCV_AL	31.7	30.4	34.3	32.5	32.2	-1.47	2.1	1.6	31.1	-2.08 *	2.4	2.0	12	XX
8PGWBX_AL	37.1	37.1 H	36.8	37.4 H	37.1	1.45	3.0	0.2	37.6	1.81	3.0	0.8	12	AL
A74TPX	34.3 L	33.5	34.1	34.5	34.1	-0.33	1.8	0.4	34.3	-0.17	1.5	0.8	12	LH
AFQYFA_AL	35.2	33.2	35.4	35.1 H	34.7	0.04	2.7	1.0	34.6	0.00	2.5	0.9	12	XX
AY2T4A	34.3	29.0 *	37.5 *	35.7	34.1	-0.33	2.4	3.7 H	34.2	-0.21	2.3	2.1	12	LA
BXXTEU	46.7 XL	47.4 XL	45.9 XL	46.4 XL	46.6	7.11 X	0.0	0.6	48.1	7.99 X	0.0	1.7	8	LH
C9WNCP	34.3	33.6	34.2	34.7	34.2	-0.27	2.2	0.4	34.4	-0.09	2.1	0.7	12	LU
CE3FJ2	34.5	34.5	33.7	35.5	34.6	-0.06	2.5	0.7	35.4	0.45	2.6	1.4	12	LH
CH4HA4	34.6	34.4	34.8	34.5 L	34.6	-0.06	1.4	0.2	34.9	0.20	1.8	0.8	12	LH
E8JQ36	32.6	32.2	33.0	33.1	32.7	-1.17	2.0	0.4	31.8	-1.64	2.3	1.1	12	LY
E8TXY7	33.0	32.4	32.8	32.3	32.6	-1.22	1.7	0.3	31.9	-1.58	1.8	0.8	12	TT
ECNPAN	33.7	33.4	33.3	33.8	33.6	-0.66	2.3	0.2	33.5	-0.63	2.2	0.4	12	LU
F7HH66	31.7	32.7	33.8	33.9	33.0	-0.98	2.1	1.0	33.0	-0.96	2.0	0.7	12	LH
FAX2BT	32.6	32.6	34.7	32.4	33.1	-0.96	2.0	1.1	33.3	-0.75	2.1	0.8	12	LU
G93KR6	37.5	38.6	39.6 X	39.7 *	38.8	2.50 *	2.2	1.0	38.8	2.49 *	2.5	0.9	12	LU
HB6XUN	34.7	35.0	35.7	33.3	34.7	-0.01	2.3	1.0	34.8	0.13	2.4	0.8	12	LW
HPK8AY	35.1	36.7	37.9 *L	36.7	36.6	1.16	2.1	1.2	36.1	0.91	2.2	1.7	11	LA
JKMQVJ	34.3	33.0 L	34.0 L	34.1	33.8	-0.49	2.0	0.6	33.6	-0.58	2.2	0.8	12	LW
JUQZZM	36.2	35.7	NO DATA	34.1	35.3	0.39	2.3	1.1	34.2	-0.20	2.4	3.6 H	11	LU

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

Report #624 (K)
September 2021

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
LJKZHZ	39.6 *	39.1 *	40.1 X	40.5 *	39.8	3.06 X	2.3	0.6	39.7	3.00 X	2.4	0.6	12	LH
MQY6RC	35.0	34.7	34.3	34.6	34.7	-0.01	2.6	0.3	34.4	-0.09	2.5	1.0	11	LH
MQY6RC_AL	35.4	34.5	35.5	35.4	35.2	0.32	2.6	0.5	34.6	-0.01	3.5	1.3	11	AL
MT7KYH	36.1	37.7	35.9 L	37.0	36.7	1.21	2.2	0.8	36.9	1.38	2.1	0.7	12	LU
MT7KYH_AL	34.0	34.8 L	35.3	34.4 L	34.6	-0.03	1.3	0.6	35.2	0.38	1.9	0.8	12	AL
N2WC9G	38.1	38.1	36.5	32.6	36.3	0.99	2.4	2.6 H	36.6	1.21	2.7	1.6	12	LA
P82J3Q	28.7 XL	30.8 L	33.0 L	31.0 L	30.9	-2.27 *	0.8	1.8	30.4	-2.51 *	2.5	1.2	12	LZ
PHZE2L	45.1 X	45.5 X	45.7 XH	45.8 X	45.5	6.48 X	3.4	0.3	44.8	6.04 X	3.3	1.4	12	TT
PJCUVM	35.0	35.4	34.7	34.9	35.0	0.19	2.5	0.3	34.3	-0.14	2.3	0.6	12	LA
PJCUVM_AL	33.5	34.8	34.3	34.7	34.3	-0.20	2.1	0.6	33.9	-0.41	2.2	0.7	12	AL
PK7KYF	39.5 *H	38.3 L	37.0	39.8 *	38.6	2.37 *	2.7	1.3	37.1	1.46	2.0	1.9	12	LA
PZHD7J	34.2 L	34.7	34.5 L	34.9	34.6	-0.06	1.5	0.3	34.8	0.11	1.5	0.4	12	TT
Q6MGRB	33.4	33.1	32.9	32.9	33.1	-0.95	2.1	0.3	33.4	-0.71	2.1	0.8	12	LW
Q8XGTC_AL	35.9	35.5	36.2	35.6	35.8	0.68	2.4	0.3	36.4	1.05	2.5	1.3	12	XX
QEFR37_AL	34.5	33.3	34.4 L	33.7	34.0	-0.41	2.1	0.6	33.2	-0.82	2.0	0.8	12	AL
RPUX2F_AL	33.6	32.9 L	33.4	32.6	33.1	-0.91	2.0	0.5	33.9	-0.43	2.1	0.8	12	AL
T8RLMB_AL	32.2	32.0	33.2	33.5 L	32.7	-1.16	1.8	0.7	33.5	-0.65	2.1	1.2	12	XX
THMWQC	43.8 XL	43.1 XL	44.8 XL	46.3 XL	44.5	5.87 X	0.0	1.4	44.3	5.77 X	0.0	1.8	12	LZ
UVCCCQ_AL	36.6	37.2	35.5 H	34.0	35.8	0.69	2.5	1.4	36.0	0.81	2.5	1.3	12	XX
VJTYUL	35.0	34.9	35.0	34.8	34.9	0.15	2.9	0.1 L	34.9	0.17	2.9	0.2 L	12	LA
VUUJWE	35.6	36.3	36.9	37.3	36.5	1.12	2.5	0.7	35.8	0.71	2.5	0.8	11	LA
WVLZLG_AL	35.9	35.3	35.4	35.7	35.6	0.53	2.6	0.3	36.6	1.20	2.6	1.7	12	AK
XKGAGK	33.6	33.4	33.8	33.7	33.6	-0.62	2.1	0.2	34.5	-0.05	2.2	1.3	12	LU
XKJYQN	37.6	38.1	37.2	36.8	37.4	1.65	2.6	0.6	36.5	1.10	2.3	2.1	12	LA
XTBDPN	32.1	33.3	33.9	33.2	33.1	-0.92	2.4	0.8	32.4	-1.32	2.6	0.8	12	LU
YQZ244	27.5 X	27.0 X	27.8 X	28.9 *H	27.8	-4.10 X	2.8	0.8	33.2	-0.82	2.1	4.1 H	12	LH
Z78FY7	34.7	34.3	31.9 *	38.4	34.8	0.09	2.4	2.7 H	35.6	0.61	2.5	1.8	12	LU

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Cumulative	
Wk Mean	34.76	34.59	34.65	34.75	Month Mean	34.67	Grand Mean	34.59	
Avg SDr	2.32	2.26	2.27	2.32	Avg SD	2.29	Avg SD	2.34	
SD btwn Labs	1.81	2.20	1.37	2.16	SD btwn Labs	1.68	SD btwn Labs	1.69	
Labs Incld	54	55	51	56	SD btwn Wks	1.01	SD btwn Wks	1.32	
Labs Excld	8	7	10	6	Labs Incld	54	Labs Incld	55	
Labs not Rcvd	0	0	1	0					

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

Report #624 (K)
September 2021

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
ID	IDM Compression Tester	LA	L&W Autoline (224 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 with 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 228
Roughness - Stylus Method, 42 lb Linerboard - 42F
TAPPI Official Test Method T575

Report #624 (K)
September 2021

WebCode	Monthly Results			Cumulative Results					
	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
22AFY2	149.6	1.16	15.71		198.9	3.95 X	37.06	4	LS
2CRTG7	145.1	0.81	20.17		150.8	0.78	8.20	3	LA
2CRTG7_AL	0.3	-10.36 X	0.02 L		117.2	-1.43	78.01 H	4	AL
2D98PF	125.8	-0.68	16.91		121.5	-1.15	3.09 L	4	LS
2D98PF_AL	143.0	0.65	18.38		132.5	-0.43	9.68	4	AK
2KMTXJ	113.0	-1.67	9.42		118.4	-1.35	7.33	4	XX
4EBRNZ_AL	119.0	-1.20	12.98		125.3	-0.90	8.30	4	AL
4J4Q4F	154.1	1.50	10.02		152.3	0.88	6.00	4	EV
4XN6N3	111.5	-1.78	9.52		114.4	-1.62	4.33	4	EV
6MHN6C	140.8	0.48	26.06 H		140.8	0.12	0.00	1	LS
7JCMFY	149.4	1.14	12.75		150.0	0.73	4.57	4	EV
7QDYCV_AL	152.9	1.42	16.14		157.5	1.22	20.97	4	AL
8PGWBX_AL	147.1	0.96	15.48		147.7	0.58	14.64	4	AL
CE3FJ2	133.3	-0.10	14.45		133.3	-0.37	3.42 L	4	EV
E8JQ36	150.6	1.24	18.19		152.4	0.89	3.37 L	4	EV
HB6XUN	127.6	-0.54	12.61		130.6	-0.55	2.19 L	4	LS
HPK8AY	271.2	10.54 X	44.17 H		178.3	2.59 *	62.10 H	4	LA
JKMQVJ	143.7	0.71	11.87		144.6	0.38	1.27	2	LA
JUQZZM	138.9	0.33	17.84		194.9	3.69 X	69.10 H	4	EV
LM6P2D	132.2	-0.19	20.18		132.8	-0.40	5.12	4	LS
MQY6RC_AL	126.7	-0.61	12.74		134.7	-0.28	6.15	4	AL
MT7KYH_AL	120.8	-1.06	12.35		128.7	-0.67	7.16	3	AL
N2WC9G	138.6	0.31	25.33 H		138.0	-0.06	2.62 L	4	LA
PJCUVM	136.4	0.14	15.16		169.2	2.00 *	57.30 H	3	LA
PJCUVM_AL	143.9	0.72	11.08		146.9	0.53	2.95 L	3	AL
QEFR37_AL	123.8	-0.84	8.81		125.4	-0.89	4.97	4	XX
RPUX2F_AL	116.3	-1.41	11.29		121.6	-1.14	6.70	4	AL
T8RLMB	148.0	1.04	15.83		147.3	0.55	11.88	4	EV
UVCCCQ_AL	126.0	-0.66	14.62		130.5	-0.56	5.91	4	XX
VJTYUL	136.2	0.12	12.99		135.8	-0.20	0.64 L	3	LS
VUUJWE	136.1	0.11	17.34		131.5	-0.49	5.27	3	LA
WVLZLG_AL	121.1	-1.04	11.09		142.3	0.22	25.52	4	AK
XKJYQN	129.6	-0.39	11.56		123.0	-1.05	9.62	4	LA
XTBDPN	150.2	1.20	14.33		152.1	0.87	3.13 L	4	EV
Z78FY7	110.4	-1.87	14.32		157.5	1.22	54.92 H	4	EV

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

Report #624 (K)
September 2021

Consensus (All Labs) Results

Month Mean	134.60		Grand Mean	138.93
Avg SD	15.32		Avg SD Months	24.01
SD btwn Labs	12.96		SD btwn Labs	15.18
Labs Incld	33		Labs Incld	33

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 #624 (K)
September 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2CRTG7_AL	358.4	0.21	9.87		358.3	0.07	0.14	2	AL
3DLZZA	371.8	1.83	4.14	L	368.5	1.33	4.72	2	PP
4EBRNZ_AL	350.9	-0.69	10.07		349.5	-1.02	1.98	2	AL
6MHN6C	350.6	-0.73	5.81		354.1	-0.45	4.91	2	XX
72VHVR_AL	366.2	1.15	9.48		368.6	1.33	3.32	2	AL
AFQYFA_AL	360.1	0.42	4.07	L	359.6	0.22	0.78	2	AL
BXXTEU	369.5	1.55	9.74		371.4	1.68	2.62	2	LA
BXXTEU_AL	345.3	-1.37	2.50	L	346.9	-1.34	2.23	2	AK
ECNPAN	365.8	1.10	11.41		361.0	0.40	6.86	2	XX
H2JNHN	354.1	-0.31	5.06		353.3	-0.54	1.01	2	PP
MQY6RC_AL	345.2	-1.38	4.85		344.6	-1.62	0.85	2	AL
PJCUVM_AL	354.7	-0.23	22.97	H	366.2	1.04	16.26	2	AL
PK7KYF	363.8	0.86	3.58	L	364.8	0.86	1.34	2	XX
Q8XGTC	354.4	-0.27	9.99		351.1	-0.82	4.67	2	PP
T8RLMB	353.9	-0.33	10.20		357.8	0.01	5.52	2	LA
T8RLMB_AL	349.6	-0.85	11.07		356.3	-0.18	9.40	2	AK
UVCCCQ_AL	123.1	-28.14 X	11.41		122.1	-29.07 X	1.41	2	XX
VYMLZE	400.3	5.25 X	6.80		397.4	4.89 X	4.07	2	TS
WVLZLG_AL	348.7	-0.96	4.52		349.9	-0.97	1.70	2	AK

Consensus (All Labs) Results

Month Mean	356.65		Grand Mean	357.74
Avg SD	9.47		Avg SD Months	5.60
SD btwn Labs	8.30		SD btwn Labs	8.11
Labs Incld	17		Labs Incld	17

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
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 #624 (K)
September 2021

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
22AFY2	73.6	-2.49 *	5.03	78.1	-2.04 *	5.03	4	TM
2D98PF	92.9	-0.64	4.91	90.6	-0.81	4.33	4	TM
4PU9CZ	99.4	-0.02	10.50	100.6	0.16	4.89	4	HZ
4XN6N3	105.2	0.54	7.33	100.2	0.12	4.42	4	TM
684KJG	95.6	-0.38	1.87	88.6	-1.01	6.05	4	TM
72VHVR	43.6	-5.37 X	1.22 L	42.3	-5.53 X	1.61 L	4	LZ
7JCMFY	104.4	0.46	3.80	87.6	-1.11	30.47 H	4	HZ
7QDYCV	145.0	4.35 X	6.44	122.7	2.32 *	26.14 H	4	SC
8PGWBX	112.0	1.19	5.70	108.3	0.91	6.24	4	SC
AFQYFA	100.1	0.05	2.57	97.9	-0.10	1.88 L	4	TM
CE3FJ2	113.0	1.28	3.81	105.0	0.60	6.16	4	SC
ECNPAN	111.5	1.14	10.77 H	112.2	1.30	2.53	4	HY
H2JNHN	107.0	0.71	6.36	104.4	0.54	1.98 L	4	HY
JKMQVJ	111.4	1.13	5.18	111.0	1.18	3.42	3	HY
JUQZZM	93.8	-0.56	6.02	102.7	0.37	25.21 H	4	TM
LM6P2D	100.0	0.04	3.08	102.8	0.38	2.29	4	HY
PJCUVM	106.2	0.63	4.82	95.7	-0.31	11.43	4	TM
PK7KYF	87.8	-1.13	2.59	87.8	-1.08	1.85 L	4	SC
Q8XGTC	99.4	-0.02	6.07	104.0	0.49	3.98	4	HY
QEFR37	96.4	-0.31	4.83	99.8	0.09	3.14	4	TM
T8RLMB	82.6	-1.63	3.13	85.3	-1.33	2.00	4	TM
UKCC6E	426.5	31.30 X	65.31 H	340.3	23.59 X	107.78 H	4	SC
WF9QKD	106.2	0.63	7.01	110.4	1.12	3.29	4	TM
WVLZLG	110.4	1.03	4.93	91.9	-0.69	12.78	4	TM
XTBDPN	98.4	-0.11	4.93	93.4	-0.54	3.60	4	TM
Z78FY7	83.4	-1.55	6.19	93.1	-0.57	20.83	4	TM

Consensus (All Labs) Results

Month Mean	99.60	Grand Mean	98.90
Avg SD	5.71	Avg SD Months	11.66
SD btwn Labs	10.44	SD btwn Labs	10.23
Labs Incld	23	Labs Incld	24

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	98.13	10.37	1.47	20
Modified Scott Bond Mechanics	111.46	0.08	11.86	2

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

Report #624 (K)
September 2021

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 - 42F
TAPPI Official Test Method T815

Report #624 (K)
September 2021

	Monthly Results				Cumulative Results			
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months
22AFY2	19.6	-2.12 *	2.51		25.2	-0.75	3.87	4
2D98PF	26.0	-0.34	1.12		27.5	0.04	1.12	4
2KMTXJ	27.4	0.05	6.11		25.8	-0.52	1.63	4
4EBRNZ	28.8	0.44	3.51		29.4	0.69	0.51	4
4J4Q4F	26.4	-0.23	1.95		23.8	-1.22	2.62	4
6MHN6C	30.0	0.77	6.87 H		29.8	0.82	3.00	4
72VHVR	23.6	-1.01	1.34		24.8	-0.86	2.39	4
7JCMFY	21.2	-1.68	4.13		20.7	-2.26 *	2.08	4
7QDYCV	33.8	1.83	0.45 L		31.6	1.45	2.47	4
8PGWBX	24.6	-0.73	1.14		24.4	-1.00	0.82	4
BAAVZR	32.9	1.58	1.24		32.9	1.89	0.98	4
CE3FJ2	31.0	1.05	1.73		30.1	0.92	1.22	4
CH4HA4	30.7	0.97	2.60		29.0	0.56	3.27	4
E8JQ36	26.6	-0.18	3.43		27.1	-0.07	3.10	4
ECNPAN	22.1	-1.42	3.17		26.4	-0.30	3.03	4
H2JNHN	29.2	0.55	4.32		26.9	-0.15	1.72	4
HB6XUN	28.5	0.35	6.97 H		28.3	0.32	0.56	4
HPK8AY	21.9	-1.48	3.52		22.1	-1.80	1.53	4
JKMQVJ	27.8	0.16	3.35		29.4	0.70	3.12	3
JUQZZM	31.8	1.27	4.32		29.7	0.79	3.74	4
LYG38K	23.8	-0.95	2.28		23.4	-1.34	0.59	4
PJCUVM	24.2	-0.84	1.10		23.5	-1.31	1.59	4
PK7KYF	28.8	0.44	0.45 L		28.9	0.52	0.25 L	4
Q8XGTC	28.8	0.44	3.42		30.7	1.13	1.92	4
QEFR37	29.4	0.62	4.44		28.6	0.42	1.48	4
RPUX2F	23.8	-0.95	1.48		25.3	-0.71	2.34	4
T8RLMB	29.8	0.70	3.31		29.3	0.68	0.87	4
VJTYUL	26.4	-0.23	0.89		26.9	-0.14	0.50	3
WGZRKA	32.0	1.33	3.54		31.2	1.32	3.84	4
WVLZLG	27.2	-0.01	3.11		28.3	0.32	0.71	4
XTBDPN	31.2	1.10	2.49		27.9	0.19	2.90	4
YZT27B	23.8	-0.95	2.28		23.9	-1.19	0.53	4
Z78FY7	25.4	-0.51	1.14		29.9	0.87	4.44	4

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

Report #624 (K)
September 2021

Consensus (All Labs) Results

Month Mean	27.23	Grand Mean	27.34
Avg SD	3.29	Avg SD Months	2.28
SD btwn Labs	3.60	SD btwn Labs	2.93
Labs Incld	33	Labs Incld	33

Key to Instrument Codes Reported by Participants

ZZ   Instruments No Longer Tracked

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

Report #624 (K)
September 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
22AFY2	24.1	1.47	2.88		24.7	1.90	1.19	4	TD
2D98PF_AL	22.6	0.31	1.85		22.6	0.21	0.73	4	AK
2KMTXJ	20.2	-1.51	1.69		21.4	-0.70	0.96	4	LP
48BA73	22.3	0.09	2.06		21.8	-0.41	0.85	4	XX
4EBRNZ_AL	20.8	-1.03	2.09		21.1	-0.99	0.33	4	AL
4J4Q4F	22.2	0.00	1.60		19.5	-2.18 *	1.82	4	XX
6E7QZ6	21.3	-0.67	3.02		22.9	0.47	1.38	4	GG
6MHN6C	22.4	0.16	2.06		22.7	0.33	0.75	4	GA
72VHVR_AL	24.0	1.40	1.04		24.3	1.58	0.66	4	AL
7JCMFY	21.4	-0.56	1.14		22.5	0.10	0.80	4	LP
7QDYCV_AL	24.2	1.53	1.00		23.3	0.78	0.67	4	AL
8PGWBX_AL	19.8	-1.82	1.32		19.5	-2.22 *	0.65	4	AL
AFQYFA_AL	21.4	-0.62	1.91		21.8	-0.43	0.50	4	AL
BXXTEU	17.4	-3.64 X	2.33		17.6	-3.67 X	0.28	2	LA
BXXTEU_AL	19.1	-2.38 *	1.16		20.7	-1.25	2.33	2	AK
CE3FJ2	24.4	1.66	1.90		23.4	0.87	1.07	4	LP
ECNPAN	23.9	1.35	3.42 H		22.4	0.05	1.25	4	TP
G2F26G	20.9	-0.98	0.76 L		21.1	-0.97	0.69	4	LP
H2JNHN	21.9	-0.20	3.02		22.6	0.18	0.92	3	XX
HB6XUN	20.9	-0.97	1.48		21.3	-0.76	0.95	4	XX
HPK8AY	21.5	-0.49	1.17		21.7	-0.45	0.33	4	LA
JKMQVJ	22.0	-0.14	1.15		22.8	0.35	0.67	3	LP
JUQZZM_AL	22.9	0.53	2.12		22.4	0.10	1.29	4	AL
LM6P2D	22.2	0.02	1.46		22.5	0.11	0.52	4	LP
MQY6RC_AL	23.4	0.97	0.95		23.5	0.88	0.04 L	4	AL
MT7KYH_AL	21.6	-0.44	1.65		21.9	-0.35	0.55	3	AL
N2WC9G	26.7	3.43 X	1.68		24.0	1.30	1.91	4	LA
NB43ND	17.2	-3.83 X	3.40 H		19.2	-2.41 *	1.41	4	GA
PJCUVM	24.7	1.92	1.89		25.1	2.21 *	0.41	4	LA
PJCUVM_AL	24.1	1.43	1.95		24.5	1.74	0.47	4	AL
Q8XGTC	22.5	0.28	3.82 H		22.8	0.35	1.65	4	TP
QEFR37_AL	23.0	0.61	1.89		22.7	0.32	0.80	4	XX
RPUX2F_AL	21.5	-0.55	1.56		21.9	-0.34	0.51	4	AL
T8RLMB_AL	21.2	-0.73	1.55		21.8	-0.42	0.88	4	AK
UVCCCQ_AL	22.0	-0.12	2.28		22.5	0.15	0.39	4	XX
VJTYUL	22.1	-0.06	1.52		22.1	-0.17	0.10 L	3	LA
VUUJWE	24.2	1.54	2.31		23.8	1.12	2.03 H	3	XX
WGZRKA_AI	20.6	-1.19	2.19		22.0	-0.24	0.95	4	AL
WVLZLG_AL	22.4	0.16	2.95		22.5	0.11	0.36	4	AK

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

Report #624 (K)
September 2021

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
XKJYQN	22.2	0.04	2.31	22.3	-0.04	0.58	4	LA
XTBDPN	21.1	-0.83	2.73	21.7	-0.45	0.50	4	GA
YQZ244	21.7	-0.37	1.89	21.3	-0.76	0.74	4	XX
Z78FY7_AL	22.2	0.03	2.02	22.2	-0.13	0.81	4	AL
ZFW7LY	22.4	0.14	1.38	22.9	0.46	0.92	4	LP

Consensus (All Labs) Results

Month Mean	22.18		Grand Mean	22.32
Avg SD	2.03		Avg SD Months	1.00
SD btwn Labs	1.31		SD btwn Labs	1.28
Labs Incld	41		Labs Incld	43

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
Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T809

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2CRTG7	56.6	54.5	56.7	56.5	56.1	-0.84	3.4	1.0	55.0	-1.38	3.6	1.8	12	LD
2KMTXJ	60.5	60.7	61.1 H	62.5	61.2	1.13	4.2	0.9	60.6	0.97	3.9	1.8	12	LD
3UNTT3	62.6	60.3	59.0	59.1	60.3	0.76	3.5	1.7	59.9	0.66	3.0	1.4	12	LD
4GX7CA	61.4	62.8	60.3	61.3	61.5	1.22	3.9	1.0	62.0	1.55	4.1	1.9	12	TH
4J6NB6	58.8	58.1	59.8	56.5 H	58.3	0.01	6.0	1.4	58.1	-0.06	5.4	1.1	12	TG
4NZCTX	59.8 L	61.4 L	59.4 L	60.7 L	60.3	0.79	0.8	0.9	61.0	1.10	0.9	1.4	12	XX
4PU9CZ	56.2	56.7	56.9	58.5	57.1	-0.46	3.2	1.0	56.9	-0.59	3.5	1.3	12	LD
4XN6N3	63.0	62.1	62.0	58.2	61.3	1.17	3.4	2.1	59.7	0.60	3.1	2.8	12	LC
6MHN6C	55.7	58.4	56.0	56.1	56.5	-0.67	3.9	1.2	58.0	-0.14	3.7	1.8	12	LZ
72VHVR	50.0 X	50.6 *	49.3 X	51.2 *	50.2	-3.09 X	4.0	0.8	52.7	-2.33 *	3.5	2.0	12	LD
7JCMFY	58.1	56.8 H	60.5	58.7	58.5	0.10	4.6	1.5	59.0	0.31	3.9	1.6	12	LZ
ARE4JZ	57.5	57.7	59.3	58.4 L	58.2	-0.02	1.9	0.8	58.4	0.04	2.4	1.3	12	LC
BYVYZU	60.4 L	60.7	60.3 L	60.7 L	60.6	0.88	1.6	0.2 L	63.9	2.31 *	1.6	2.5	12	MB
C9WNCP	56.8	55.4	54.8	55.0	55.5	-1.07	3.8	0.9	59.2	0.37	3.8	3.1	12	LD
CH4HA4	61.4	61.3	61.7	65.2 *	62.4	1.59	3.4	1.9	62.9	1.90	3.7	1.7	12	LD
E8JQ36	57.0	55.1	55.4	58.3	56.5	-0.70	3.8	1.5	59.7	0.58	3.5	2.9	12	EN
ECNPAN	55.4	56.6	56.9	55.9	56.2	-0.80	4.4	0.7	56.9	-0.59	3.7	1.2	12	LC
ENZUKQ	58.1	58.5	59.1	61.9	59.4	0.44	4.3	1.7	58.5	0.11	3.7	1.9	12	LD
F7HH66	56.0	55.4 L	57.0	56.9	56.3	-0.74	2.9	0.8	56.1	-0.92	2.7	1.2	12	EN
FAX2BT	56.3	58.3	56.4	56.9	57.0	-0.50	2.9	0.9	57.6	-0.27	3.2	2.1	12	LZ
G2F26G	59.2	62.1	59.5	60.4	60.3	0.77	3.4	1.3	57.8	-0.21	3.6	2.3	12	LD
HPK8AY	54.2	52.4	59.1	55.2	55.2	-1.18	4.8	2.9	55.0	-1.36	5.0	3.7	12	MB
JTHLXN	54.6	54.7 L	54.7 L	54.5 L	54.6	-1.40	1.8	0.1 L	57.8	-0.19	2.5	2.9	12	TU
LJKZHZ	56.3	54.5	54.7	53.2	54.7	-1.39	3.2	1.3	55.8	-1.04	3.0	1.4	12	LD
LM6P2D	NO DATA	NO DATA	NO DATA	61.0	61.0	1.06	4.5	0.0	58.0	-0.14	3.9	2.1	4	LD
MT7KYH	64.1 *	62.7	61.8	63.0	62.9	1.77	4.0	1.0	63.3	2.08 *	3.6	1.5	8	LD
N2WC9G	56.0	59.4	58.9	55.3	57.4	-0.33	4.5	2.0	59.5	0.50	5.1	4.6 H	12	TU
NB43ND	63.6 *H	60.6	60.4	58.8	60.9	0.99	4.5	2.0	58.9	0.23	5.1	2.1	12	LD
P82J3Q	55.8	54.3	57.0	56.3	55.8	-0.94	3.5	1.2	55.7	-1.06	3.8	1.9	12	TH
PJCUVM	57.0	55.6	56.9	56.9	56.6	-0.64	3.3	0.6	56.3	-0.84	3.6	1.0	12	LD
PZHD7J	58.4	59.6	56.0 H	60.0	58.5	0.09	5.0	1.8	59.2	0.35	5.0	1.4	12	TJ
Q8XGTC	60.8	57.9 H	57.4	60.4	59.1	0.32	4.8	1.7	60.2	0.78	4.2	1.6	12	LD
RPUX2F	57.8	59.4	64.4 *	60.9	60.6	0.90	3.8	2.8	60.2	0.81	3.3	1.7	12	LZ
TET29C	58.2	58.5	58.5	58.2	58.4	0.03	4.3	0.2 L	58.8	0.22	3.7	0.5 L	12	LD
THMWQC	55.2	54.4	56.5	52.1 *	54.5	-1.43	2.6	1.8	54.6	-1.51	3.8	1.8	12	EM

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

Report #624 (K)
September 2021

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
	Weekly Means				Monthly Results				Cumulative Results					
TNCE89	57.7	57.2	56.3	56.0 L	56.8	-0.57	2.4	0.8	56.9	-0.58	2.6	0.7	12	LD
TUGDFD	63.3 *H	61.9 H	64.3 *	61.5 H	62.7	1.72	8.4	1.3	63.3	2.05 *	5.9	1.0	12	LC
TYVQK7	58.6	58.5	58.4	58.8	58.6	0.11	1.7	0.2 L	58.2	-0.03	1.5	0.4 L	12	LD
UKCC6E	53.3	52.9	53.6	54.4	53.6	-1.82	2.6	0.6	54.1	-1.74	3.3	1.8	12	LC
URA9LP	58.7	58.5	58.0	57.6	58.2	-0.03	3.1	0.5	58.1	-0.06	2.9	0.6	12	LC
UVCCCQ	60.6	60.7	59.6	60.6	60.4	0.81	3.7	0.5	58.9	0.26	4.0	2.0	12	LD
VJTYUL	58.3	59.1	58.4	59.2 L	58.8	0.18	2.1	0.5	58.6	0.11	2.3	0.5 L	8	LD
VUUJWE	52.3 *	53.2	56.7 H	44.9 XH	51.8	-2.50 *	6.5	4.9 H	55.0	-1.37	5.7	4.7 H	8	MB
W8DPLM	57.9	58.5	59.0	58.8	58.6	0.11	3.0	0.5	58.2	-0.03	3.0	0.6	12	LD
WNMFJL	33.8 X	33.2 XL	32.7 X	35.2 X	33.7	-9.45 X	2.4	1.1	40.0	-7.53 X	6.0	13.5 H	12	XX
WVLZLG	56.5	51.0 *	62.1	55.6	56.3	-0.76	4.7	4.6 H	56.0	-0.94	4.4	2.8	12	LD
XTBDPN	58.9	60.1	61.7	61.0	60.4	0.83	4.7	1.2	57.2	-0.45	3.7	2.8	12	LD
XZVK68	45.8 X	43.1 X	47.1 X	47.3 XH	45.8	-4.78 X	5.1	1.9	44.3	-5.76 X	5.0	1.9	12	TC
YGFGA8	57.0	57.9	62.2	59.4	59.1	0.32	3.8	2.3	59.1	0.35	3.8	2.1	8	LD
YLRETN	59.4 L	59.2 L	59.2 L	59.5 L	59.3	0.40	0.8	0.2 L	59.3	0.44	1.1	0.1 L	12	LD
YQZ244	57.7	57.2	55.8 L	57.0	56.9	-0.52	3.2	0.8	55.1	-1.31	4.4	1.7	12	LD
YTAXY9	61.0	65.8 *	65.6 *	64.3 *	64.2	2.27 *	4.1	2.2	60.9	1.06	4.0	3.1	12	LD
YZT27B	53.6	54.5	56.7	54.9	54.9	-1.29	3.9	1.3	55.8	-1.04	3.6	1.3	12	LZ
Z78FY7	58.3	60.8	55.9	58.6	58.4	0.05	3.6	2.0	58.9	0.24	4.0	2.2	12	LC
ZFW7LY	55.6	57.1	57.6	60.4	57.7	-0.22	2.8	2.0	58.7	0.18	2.9	1.7	12	LD

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4	Monthly		Cumulative	
Wk Mean	58.07	57.91	58.61	58.32	Month Mean	58.27	Grand Mean	58.29
Avg SDr	3.62	3.78	3.76	4.06	Avg SD	3.86	Avg SD	3.71
SD btwn Labs	2.71	3.21	2.67	2.94	SD btwn Labs	2.60	SD btwn Labs	2.42
Labs Incld	51	52	51	52	SD btwn Wks	1.66	SD btwn Wks	2.05
Labs Excld	3	2	3	3	Labs Incld	52	Labs Incld	53
Labs not Rcvd	1	1	1	0				

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

Report #624 (K)
September 2021

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
TC	TMI Monitor/Compression Tester, 17-37	TG	TMI Compression Tester, Model 17-10
TH	TMI Compression Tester, Model 17-76	TJ	TLS Compression Tester, Model CDM-5
TU	TMI Universal Crush Tester (TMI K440)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program
Analysis 250
Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM12
TAPPI Official Test Method T843

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
		Weekly Means				Monthly Results				Cumulative Results				
2KMTXJ	65.1	66.7	69.1 H	69.9	67.7	-0.59	3.8	2.2	67.9	-0.49	4.6	3.3	12	LD
3UNTT3	68.5	67.3	71.5	70.2	69.4	0.34	2.6	1.8	70.2	0.99	2.1	1.9	12	LD
48BA73	68.6	69.0 L	68.7	68.7 L	68.7	-0.02	1.6	0.2 L	68.8	0.07	2.1	0.8	12	LZ
72VHVR	68.3	67.2	65.9	70.8	68.0	-0.41	3.5	2.1	67.6	-0.70	3.5	1.3	12	LD
A74TPX	66.4	67.8	No Data	No Data	67.1	-0.93	2.3	1.0	68.4	-0.17	2.2	1.2	10	LD
BXXTEU	53.3 X	53.1 X	52.0 X	52.3 X	52.7	-8.93 X	3.7	0.7	52.7	-10.34 X	3.6	0.6	8	LD
BYVYZU	70.9 L	70.1	70.3	71.0	70.6	0.99	1.7	0.4	71.0	1.54	1.6	0.6 L	12	MB
E8JQ36	71.2	71.5 H	69.4	71.6	70.9	1.19	4.2	1.0	67.9	-0.50	4.2	3.3	12	EN
ECNPAN	70.0	71.2	69.9	70.7	70.5	0.92	3.6	0.6	69.7	0.71	2.9	2.0	12	LC
FAX2BT	69.1	65.5	67.2	67.3	67.3	-0.84	3.1	1.4	68.1	-0.35	3.4	2.1	12	LZ
G2F26G	70.8	70.9	73.0 *	71.3	71.5	1.50	3.8	1.0	70.8	1.38	3.8	1.3	12	LD
LM6P2D	No Data	No Data	No Data	73.2 H	73.2	2.42 *	5.1	0.0	70.9	1.44	3.3	1.4	5	LD
P82J3Q	62.4 *	61.9 X	61.4 X	63.6 *	62.3	-3.58 X	2.4	0.9	62.6	-3.94 X	3.0	1.4	12	TH
PJCUVM	64.0	70.5	68.4	67.1	67.5	-0.70	4.0	2.7	65.7	-1.93 *	4.4	4.2 H	12	LD
Q8XGTC	65.4	65.9	66.5	66.1	66.0	-1.55	3.2	0.5	66.4	-1.44	3.7	0.8	12	LD
RPUX2F	64.0	68.0	67.8	68.5	67.1	-0.95	3.0	2.1	66.7	-1.25	3.0	1.3	12	LZ
TYVQK7	68.4	68.3	68.6	68.5	68.5	-0.18	1.8	0.2 L	69.0	0.20	1.7	0.4 L	12	LD
URA9LP	68.0	68.8	69.1	68.4	68.6	-0.12	3.1	0.5	69.2	0.36	4.5	0.9	12	LD
VJTYUL	68.5	69.1	68.7	69.3	68.9	0.06	1.9	0.4	68.8	0.09	2.4	0.3 L	8	LD
WVLZLG	63.7	67.2	69.3	70.5	67.7	-0.62	4.0	3.0	67.8	-0.56	3.7	1.7	12	LD
Z78FY7	72.2 H	69.6	70.9	65.9	69.7	0.48	4.2	2.7	70.7	1.31	4.0	4.1	12	LC
ZFW7LY	67.5	67.0	65.5	68.0	67.0	-0.99	2.3	1.1	67.6	-0.69	3.0	1.3	12	LD

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Grand	Cumulative
Wk Mean	67.64	68.51	68.89	69.02	Month Mean	68.78	Grand Mean	68.64	
Avg SDr	3.30	3.17	3.21	3.10	Avg SD	3.29	Avg SD	3.34	
SD btwn Labs	2.79	1.78	1.91	2.29	SD btwn Labs	1.81	SD btwn Labs	1.55	
Labs Incld	20	19	18	20	SD btwn Wks	1.59	SD btwn Wks	2.05	
Labs Excld	1	2	2	1	Labs Incld	20	Labs Incld	20	
Labs not Rcvd	1	1	2	1					

Key to Instrument Codes Reported by Participants

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	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 #624 (K)
September 2021

WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
29TGL7	46.0 H	44.8	45.9	44.4	45.3	0.71	5.0	0.8	44.3	0.61	4.7	1.2	12	XX
2CRTG7	44.3	41.7	47.2	40.2	43.4	0.03	3.6	3.1	41.2	-0.46	3.6	2.5	12	LD
4GX7CA	37.7 *	35.2 *	37.6	34.3 X	36.2	-2.51 *	2.5	1.7	36.6	-2.08 * 2.9		1.5	12	LZ
4PU9CZ	42.3	45.7	46.9	47.8	45.7	0.86	3.7	2.4	44.0	0.50	3.6	1.9	12	LD
6MHN6C	43.9	44.0	42.6 L	40.5	42.8	-0.17	3.8	1.6	42.1	-0.16	3.1	1.9	12	LD
72VHVR	42.3	46.7	44.8	41.7	43.9	0.22	4.2	2.3	42.3	-0.11	3.3	1.8	12	LD
ARE4JZ	47.8	47.2	47.9 L	47.6 L	47.6	1.55	1.5	0.3	46.9	1.51	1.8	1.7	12	LC
BYVYZU	42.4 L	42.6	42.3 L	42.5 L	42.4	-0.29	1.2	0.1 L	42.4	-0.05	1.5	1.1	12	MB
ECNPAN	43.9	40.8	46.4	46.8	44.5	0.43	4.1	2.8	44.4	0.62	3.5	2.1	12	LC
ENZUKQ	43.2	43.4	42.5	39.1	42.0	-0.43	3.2	2.0	41.7	-0.30	3.1	1.6	12	EM
G2F26G	44.7	43.4	44.1	44.4	44.2	0.32	2.8	0.5	44.3	0.61	2.9	1.4	12	LD
GAWAVX	44.3	44.5	45.4	46.8	45.3	0.72	2.7	1.1	43.8	0.41	3.0	1.6	12	LD
HPK8AY	43.9	44.1	47.5	43.6 L	44.8	0.54	2.9	1.8	43.3	0.25	3.1	1.7	12	MB
JTHLXN	42.8	42.8 L	42.7 L	42.6 L	42.7	-0.20	1.1	0.1 L	40.7	-0.64	2.3	1.7	12	TU
NB43ND	44.8	40.7	45.4	45.3	44.1	0.29	3.1	2.2	39.9	-0.93	4.4	4.6 H	12	LD
P82J3Q	36.5 *	38.5	39.7	40.9	38.9	-1.55	2.8	1.9	39.0	-1.25	2.7	1.1	12	TH
Q8XGTC	47.1	44.8	46.0	45.0	45.7	0.88	3.2	1.1	45.3	0.95	3.1	1.1	12	LD
TET29C	43.2	43.3	43.4	43.2	43.3	0.01	3.0	0.1 L	43.8	0.44	2.6	0.7	12	LD
THMWQC	44.3 H	46.6	49.4	48.0	47.1	1.37	5.0	2.2	44.9	0.81	4.0	2.1	12	EM
TNCE89	43.7	45.2	44.4	44.6	44.5	0.44	3.4	0.6	44.6	0.69	2.7	0.8	12	LC
TUGDFD	38.5	37.3 H	36.4 *	39.0	37.8	-1.95 *	5.0	1.2	35.5	-2.43 * 4.9		3.4	12	XX
VJTYUL	44.8	44.3	45.2	43.9	44.6	0.46	3.2	0.6	44.8	0.77	3.4	0.6	8	LD
XJNJC7	43.9	42.1	44.4	43.1	43.4	0.04	2.5	1.0	43.0	0.15	2.7	1.9	12	TH
XZVK68	36.9 *	36.7 *H	35.5 *H	37.4 *	36.6	-2.36 *	5.4	0.8	36.1	-2.23 * 5.1		1.3	12	TC
YGFGA8	43.2	46.8	43.2	43.4	44.2	0.32	3.4	1.8	45.1	0.86	3.5	1.8	11	LZ
YLRETN	45.0 L	45.2 L	45.1 L	45.1 L	45.1	0.66	0.5	0.1 L	45.4	0.97	1.3	0.3 L	12	LD
YTAXY9	42.2 L	42.2	44.2	43.2	43.0	-0.11	2.8	1.0	44.1	0.54	2.9	1.4	12	LD
ZFW7LY	43.9	42.2	40.6	43.0	42.4	-0.29	2.9	1.4	42.4	-0.06	3.9	1.4	12	LD

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly		Cumulative
Wk Mean	43.12	42.95	43.81	43.45	Month Mean	43.25	Grand Mean	42.57
Avg SDr	3.78	3.35	3.09	3.25	Avg SD	3.37	Avg SD	3.33
SD btwn Labs	2.74	3.08	3.38	2.76	SD btwn Labs	2.81	SD btwn Labs	2.90
Labs Incld	28	28	28	27	SD btwn Wks	1.56	SD btwn Wks	1.85
Labs Excld	0	0	0	1	Labs Incld	28	Labs Incld	28
Labs not Rcvd	0	0	0	0				

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

Report #624 (K)
September 2021

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		**TC**	TMI Monitor/Compression Tester, 17-37
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 #624 (K)
September 2021

WebCode	Week 1		Week 2		Week 3		Week 4		Mean	CPV		SD	SD Wks		Mean	CPV		SD	SD Wks		Wks	Inst
2CRTG7	9.3	X	10.2	X	8.3	XH	11.0	X	9.7	-7.32	X	1.7	1.1	H	9.5	-8.04	X	1.3	1.0	H	12	LZ
2D98PF	13.6		13.7		14.0		14.0		13.8	0.37		1.1	0.2		13.9	0.57		1.1	0.2		12	LA
4NZCTX	12.6		12.4	H	12.7	L	12.7		12.6	-1.92	*	1.0	0.2		12.8	-1.55		1.0	0.4		12	XX
6MHN6C	13.5		13.0		13.4		13.4		13.3	-0.50		1.1	0.2		13.4	-0.46		1.1	0.3		12	LZ
72VHVR	13.6		13.9		13.9		13.8		13.8	0.34		1.0	0.1		14.0	0.81		1.0	0.4		12	LA
AY2T4A	14.4		14.5		15.5	X	14.3	H	14.6	1.93	*	1.3	0.6		14.2	1.12		1.2	0.6		12	LA
CH4HA4	14.2	L	14.2	L	14.2	L	14.4	L	14.3	1.22		0.5	0.1		14.2	1.23		0.6	0.2		12	LH
E8JQ36	13.0		12.8		12.9		13.4		13.0	-1.06		0.9	0.3		12.8	-1.61		1.0	0.3		12	LB
ECNPAN	12.9		12.9		13.1		13.4		13.1	-1.02		1.1	0.2		13.3	-0.49		1.1	0.4		12	LU
F7HH66	13.3		13.4		13.3		13.7		13.4	-0.35		1.1	0.2		13.5	-0.25		1.1	0.3		12	LH
GAWAVX	14.2		13.8		13.0		13.7		13.7	0.10		1.1	0.5		13.4	-0.32		1.0	0.5		12	LA
N2WC9G	14.4		13.1		14.1		13.0		13.6	0.05		1.1	0.7		13.6	-0.06		1.0	0.8		12	LA
NB43ND	14.1		15.2	*	13.8	H	15.2	X	14.6	1.78		1.3	0.7		14.7	2.18	*	1.2	0.6		12	LA
P82J3Q	12.6	L	13.7	L	13.2	L	13.1	L	13.2	-0.87		0.1	0.4		12.9	-1.30		0.9	0.4		12	LZ
PJCUVM	13.7		13.5		13.6		13.2		13.5	-0.22		0.9	0.2		13.5	-0.16		1.0	0.2		8	LA
PZHD7J	14.2		14.0		13.7		13.7		13.9	0.51		1.1	0.2		13.7	0.21		1.0	0.3		12	TT
Q8XGTC	13.0		13.0		13.2		13.1		13.0	-1.07		0.9	0.1		13.1	-0.88		1.0	0.3		12	LB
TNCE89	14.4	H	13.8		14.2		13.7		14.0	0.76		1.3	0.3		14.0	0.78		1.1	0.5		12	LH
TYVQK7	13.6	L	13.5	L	13.6	L	13.7	L	13.6	-0.05		0.4	0.1		13.7	0.16		0.4	0.1		12	LA
URA9LP	13.5		13.8		12.9		14.0		13.5	-0.15		0.8	0.5		13.4	-0.42		0.8	0.5		12	LB
VJTYUL	13.7		13.9		13.8		13.6		13.8	0.27		1.2	0.1		13.8	0.33		1.2	0.2		8	LB
VUUJWE	13.9		14.0	H	14.4		13.8		14.0	0.77		1.2	0.3		13.5	-0.15		1.2	0.6		8	LA
W8DPLM	13.0		13.4		13.9		14.1		13.6	-0.03		0.8	0.5		13.6	0.10		0.9	0.4		12	LB
WVLZLG	14.9	*	15.3	*	13.6		14.3		14.5	1.70		1.1	0.8	H	14.7	2.11	*	1.1	0.6		12	LA
XKGAGK	13.7		13.5		13.5		13.7		13.6	-0.01		0.9	0.1		13.8	0.38		0.9	0.4		12	LU
XTBDPN	12.9		13.2		13.7		13.0		13.2	-0.80		1.2	0.3		13.1	-1.01		1.1	0.3		12	LU
XZVK68	12.4		12.8		12.8		12.7		12.7	-1.77		1.1	0.2		12.9	-1.34		1.1	0.3		12	TS

Consensus (All Labs) Results

	Week 1	Week 2	Week 3	Week 4		Monthly			Cumulative
Wk Mean	13.59	13.62	13.53	13.57	Month Mean	13.61		Grand Mean	13.58
Avg SDr	0.98	1.02	1.07	1.00	Avg SD	1.02		Avg SD	1.02
SD btwn Labs	0.65	0.68	0.47	0.48	SD btwn Labs	0.53		SD btwn Labs	0.51
Labs Incld	26	26	25	25	SD btwn Wks	0.37		SD btwn Wks	0.42
Labs Excld	1	1	2	2	Labs Incld	26		Labs Incld	26
Labs not Rcvd	0	0	0	0					

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

Report #624 (K)
September 2021

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

End of Report